Technology Fee Full Proposal

Title: Reinventing Higher Education Classrooms One Room at a Time

Proposer: Suzanne M. Colvin, scolvin@coe.ufl.edu, School of Teaching and Learning, College of Education, 2403 Norman Hall, 352-273-4218, 352-392-9191
Penny Cox, pcox@coe.ufl.edu, School of Special Education, School Psychology, and Early Childhood, 1403 Norman Hall, 352-273-4280 , 352-392-9191;
Trace Choulat, tchoulat@coe.ufl.edu; College of Education

Sponsoring Organization: School of Teaching and Learning, School of Special Education, School Psychology, and Early Childhood Studies, and College of Education

Purpose and Specific Objectives: To create a collaborative and flexible teaching space where educators can utilize constructivist teaching methods through the addition of interactive whiteboards, moveable furniture, rolling white boards, *Integrated Presentation Mobiles* (portable presentation technology that allows collaborative teams to share views from multiple laptops or iPads in "real time") and iPads. Specific objectives are to: **1)** provide a "pilot" setting for teaching and modeling 21st Century Skills of problem solving, collaboration, and critical thinking through incorporation of mobile and fixed technologies within a large and heavily utilized classroom at Norman Hall; **2)** provide a model for progressive higher education settings that can be replicated; **3)** increase students' active engagement in learning and faculty use of constructivist pedagogy.

Impact/Benefit: The College of Education provides instruction for students across the entire campus as well as for students preparing to be future educators. 1600 students currently have active majors in education. There are over 575 students with active minors in education from an assortment of colleges along with a multitude of students required to take education courses as part of their majors from the College of Liberal Arts and Sciences and the College of Agriculture. Hundreds of students take elective courses in Norman Hall, including students in nursing, journalism, business, sociology, health science, history, anthropology, and engineering. The College of Education offers eight general education courses at Norman Hall with very heavy enrollments.

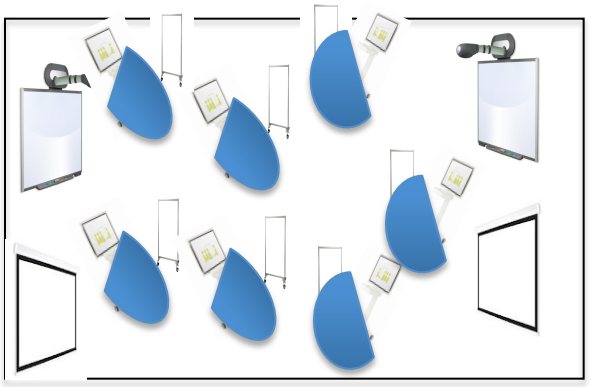
In this robust educational environment, it is essential that classrooms be technologically enhanced for faculty to support new pedagogies that develop 21st Century skills of problem solving, collaboration, research, and critical thinking. The College of Education also bears the responsibility of demonstrating the potential of these technologies in improving teaching and learning, especially when considering that many of the students in our classrooms will be future educators affecting literally thousands of K-12 students. While modern students are digital *natives* who are comfortable with using and consuming technologies, students and contemporary educators are often unaware of the educative uses of technologies and how they can support the interactive processes of constructivist teaching.

Currently, classrooms in the college work best for lecture and discussion. Most have a fixed projection devise wired to a fixed networked computer, able to access Internet through wireless connection. These classrooms support teaching that is focused on the *delivery* of information. Students come to class with laptops or hand-held devices, but instruction isn't designed to take advantage of these tools. Instructors need to extend their teaching methodologies with new, widely available technology tools.

iPads – We surveyed students in randomly selected classrooms estimating that no more than 60% of students currently taking courses in our building have tablet devices. Student tablets are not all the same and are not synchronized with the same applications to be used by instructors. In order to effectively utilize tablet devices to increase instructional engagement, the devices need to be synchronized to contain the same applications and information. Educational applications to be utilized can cost individual students as much as $60.00 for each application. The college has agreed to provide these applications for thirty iPads to ensure that all students in class have the required applications for effective utilization as an instructional tool. The college's instructional technology office has agreed to load the devices with the selected applications and sustain and update them as requested. At their suggestion, we have added cases for iPads to protect them from damage. As the "reinvented" classroom will be a "pilot" of sorts, having the synchronized set if iPads allows for experimentation with optimal uses of tablet devices to enhance instruction.

Integrated Presentation Mobiles: The integrated presentation mobile systems can be used in this and other classrooms. The integrated presentation mobile makes it possible to share information from multiple laptops or tablets via an integrated monitor. These systems can then be positioned at tables facilitating group work for up to seven students. Custom pod tables are believed to be *optimal* (although not required) for collaborative group work with the integrated presentation units. By having moveable chairs and multiple collaborative stations, students can work in small groups, even moving from group to group, to research topics, work collectively on questions, or generate solutions to problems. The projection on the integrated 40" monitor allows instructors to easily gain a *glimpse* of group thinking, even from a distance. Each station has a portable white board to record ideas and to stimulate the thinking of the group as they see it recorded.

Interactive Whiteboards: SMART Board interactive white boards will be mounted at each end of the large classroom (NRNA 2309) facilitating their use by two groups of students simultaneously. Many students taking classes in Norman Hall plan to be educators, even in many of our general education courses, as the largest occupational group in the country is teachers. As such, it is important that we model and instruct on the use of this technology as educators. Virtually every field is expanding their use of interactive white boards for collaboration and information sharing. Interactive white boards will give faculty and students access to a plethora of multi-modal and timely resources available on the Web and on software that accompanies SMART Board interactive white boards.



Benefits to IT: By experimenting with one classroom as to the most appropriate way to incorporate new technologies in higher education classrooms, we minimize wasteful spending and time on the part of IT. Starting with one classroom offers a model for others. We can then homogenize classrooms making maintenance of technologically enhanced classroom spaces much easier. We currently utilize the out-dated, costly, and hard to maintain laptop cart model. Incorporation of this new model would eliminate the need to maintain and transport outdated technology. There is training built in to the proposal as well for faculty, staff, and IT personnel to facilitate proper care and use of the devices reducing maintenance and support required.

Benefits to the College and University:

1) Enhanced technology applications in university classrooms means increased learning and increased enrollments. Students and parents expect universities to be innovative and to utilize the latest technologies in their teaching to prepare students for the 'real world.' Classrooms such as the one proposed here, help to meet this demand.

2) The College of Education and teacher preparation programs within the college are well-known, and well-respected statewide as well as nationally, with teacher preparation programs ranking 15th in the nation by U.S. News and World Report, and the College of Education ranking 24th. To maintain this reputation, it is important that our technologies are improved in order to stay current in both our own pedagogies and in promoting the use of current and effective pedagogies in K-12 classrooms across the state.

3) With the thousands of students regularly in our classrooms, the benefit from the purchase and incorporation of these technologies in Norman Hall classrooms reaches students campus-wide. For little or no additional cost to the student, learning is enhanced and instruction more engaging. Necessary 21st Century skills of problem solving, collaboration, research, and critical thinking are modeled and practiced regularly better preparing students for the work force and "real" world.

4) The development of a classroom space that maximizes learning through the creative use of new technologies can serve to as a model for instructors within the college and across the campus. Training will be required for faculty within the two departments utilizing the reinvented classroom. Interested faculty within the entire college as well as campus – wide will be invited to attend trainings as well. The college plans to host a demonstration for all interested University instructors once the classroom is fully operational.

5) The effectiveness of the reinvented classroom will be measured and used to improved instruction and learning in the higher education setting. The attainment of specific objectives will be assessed comparing ratings on items 6, 9, and 16 of instructor evaluations using the classroom and technology to average college & departmental ratings. Additionally, surveys will be developed and administered to students and faculty.

Sustainability: Part of the project will include a "training of experts" so that the college always has faculty and IT personnel who can provide training on the use of new technologies for faculty and graduate students serving as instructors and on constructivist pedagogy that incorporates in-class, small group problem solving, research, information sharing, and collaboration. The goal is sustaining both the technology and the improved pedagogy. The College of Education has agreed to maintain the new technologies and to update and upgrade these resources as needed. Costs associated with updating applications for iPads will be covered through the departmental funds from the two departments submitting the concept paper. Personnel in the Education Library are well trained on SMART Boards and the company regularly provides updated software for use with SMART Boards. The interactive presentation devices will be assembled, and programmed through the IT-AT administration office. In cooperation with the college's instructional technology office, mobiles will be maintained and regularly updated. As the classroom develops into a model learning space for integration of technology to improve the instructional effectiveness in the higher education setting, the college plans to build upon the current technologies with the addition of capabilities such as video streaming and conferencing, video and audio recording and sharing, etc. which can be added for relatively minimal cost and other new technologies as they develop.

Timeline:

Summer, 2012:	College will renovate & prepare learning space (Norman 2309)
	Carpet, paint, removal of two-way glass and replaced with window, alarm installation,etc.
August 2012 –	Purchase Hardware, Equipment, and Furniture
By Dec. 2012 –	Assemble and program integrated presentation mobiles
By Dec. 2012–	Install SMART Boards, Increase Wireless, Outlets, Cables, etc.
By Dec. 2012 -	Loading of apps on iPads, iPads synchronized
January 2013-	Training of experts and establish protocols and procedures
Spring, 2013 -	Experts use classroom with technologies, working with IT to troubleshoot, address compatibility and usage issues, capacity, etc.
March 2013 –	Training of faculty of SESPECs and STL departments w/ college-wide faculty invited
Summer A, 2013–	Classroom fully operational
August-Sep., 2013–	Campus-wide faculty invited for demonstration
October, 2013-	Develop assessments; i.e. surveys, method for analyzing faculty evaluations
Dec. 2013 -	Assess effectiveness; i.e. evaluations and surveys

Technology Fee Concept Paper Proposal PreliminaryBudget

Title: Technologically Enhanced Classrooms in Norman Hall

Proposer's Name: Suzanne M. Colvin, scolvin@coe.ufl.edu, 352-273-4218

BUDGET

Custom Collaborative Media Pod Tables

Item	Qty Per Pod	$ Per Pod	Qty Pods	$ Total
Custom "Pod" Table	1	$2,200.00	7	$15,400.00
Fliptop Touchscreen Control Panel (Crestron C2N-FT-TPS4)	1	$1,184.50	7	$8,291.50
Presentation control system (Crestron DMPS-300)	1	$4,112.50	7	$28,787.50
Digitalmedia Receiver (Crestron DM-RMC-100-C)	1	$629.50	7	$4,406.50
Cable Cubby Per Student (Extron Cable Cubby 300C)	4	$407.50	7	$11,410.00
46" to 50" LED/LCD Display Panel	1	$1,665.00	7	$11,655.00
Digital Video and Audio Cables	1	$450.00	7	$3,150.00
Control System Programming	1	$200.00	7	$1,400.00
Chairs	50	$80.00		$4,000.00
Rolling Whiteboards	1	$300.00	7	$2,100.00
Total Media Pod Budget				$90,600.50

Media Pod Table Integration with Classroom A/V

Item	Qty	$ Per Item	$ Total
DigitalMedia Receiver (Crestron DM-RMC-100-C)	2	$1,259.00	$2,518.00
DigitalMedia Transmitter (Crestron DM-TX-201-C)	2	$1,703.00	$3,406.00
HDMI Switcher (Crestron HD-MD8X2)	1	$1,462.00	$1,462.00
Control Panel (Crestron MPC-M20-W)	1	$956.95	$956.95
Cabling	1	$436.00	$436.00
Programming	10	$100.00	$1,000.00

Interactive Whiteboard Systems

Item			
SMART X885ix 87" Multitouch Interactive Whiteboard	2	$4,899.00	$9,798.00
Integrated Classroom Computer	2	$1,000.00	$2,000.00
Podium with Laptop Connections	2	$1,000.00	$2,000.00
Installation (10%)	1	$689.90	$689.90

Tablets

Item			
iPad 16GB with WiFi and Applecare for Student use (10-pack)	2	$5,300.00	$10,600.00
Bretford PowerSync cart for iPads	1	$2,500.00	$2,500.00

Classroom Electrical, Connectivity and Environment Upgrades

Item		
Wifi Wireless Networking Improvements	1	$4,000.00
Additional Electrical outlets and electrical supply for classroom	1	$10,000.00

Training to Ensure Effective Use of Facility

Item		
Training College-Based Experts and Stipend to Train	1	$2,500.00
Faculty Training	1	$2,500.00

PROJECT TOTAL:	$146,967.35