

Wireless Instructional Strategies in the Humanities (WISH): Training Traditional Faculty for Change

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Abstract: Placing powerful technology tools in students' hands along with activities designed to encourage collaboration, exploration, and critical thinking, causes a role shift to occur. Students become researchers and presenters, constructing knowledge and adding it to a global knowledge base. Faculty who incorporate technology into their course work then can become guides and facilitators. However, the challenges created by this role shift require a reframing of our faculty development model. The Innovative Technology Center at the University of Tennessee designed and implemented a pilot project, putting powerful, wireless laptops into student and faculty hands. The Humanities area of Arts and Sciences was chosen for this project because they are typically underserved in terms of technology resources, yet rich in opportunities for collaborative work. With laptop computers, a versatile suite of software tools, and a customized WISH institute for training before project launch, our implementation team crafted a model faculty development project that addressed key aspects of transitioning traditional faculty to a more collaborative and dynamic learning environment.

Context of the WISH Project

“To ensure that America's students are the best-educated in the world, we have to have top-quality, innovative higher education; replicate the educational approaches that work; and take advantage of all the new technologies that can strengthen student learning” (Office of Postsecondary Education, 2001). Many voices agree that students need to emerge from their undergraduate experience equipped for the modern work environment. Employers state unequivocally that they want information-savvy, team-comfortable, and problem-solving employees. In a government report surveying the impact of IT on the American economy, the authors note that “Even for workers in non-IT jobs, basic IT skills are becoming a requirement...Educators, too, recognize the growing need for skilled workers and are designing curricula to include basic IT skills training...” (Office of Policy Development, 2001, p. 41). We must move rapidly toward creating learning environments in which students receive the skills, both cognitive and technical, which will enable them to succeed in the contemporary world. While curriculum content is the same as in a traditional classroom, the ways in which we engage students with this content need to be dramatically altered. So our team at ITC sought a way to bring technology out of the lab into the classroom and then examined one model for how to prepare faculty for new opportunities and challenges.

A pilot project involving the use of technology and collaborative methods, appeared certain to pose challenges for traditional faculty. The shift from teacher-centric to student-centric classroom does not follow a smooth path. From the inception of the project, the implementation team understood that resistance to change would appear, even among self-described innovators. This paper will describe the WISH institute as a creative vehicle for assisting faculty in transforming the classroom. The workshops of our WISH institute were designed to explore and create new strategies for delivering material and structuring classroom interactions. Our training focused on designing collaborative activities that would increase students' engagement with the material. We looked at ways to utilize common communication tools such as email and discussion forums to leverage the power of networked laptops to enhance writing and discussion skills. At every stage of the project, we gathered faculty feedback and addressed pedagogical and technical issues as they arose.

Transformation of teaching practice in higher education requires a convergence of initiatives and the vision to identify opportunities for pedagogical research. In the WISH project, three university groups, the Network Services, ITC, and the College of Arts and Sciences, converged to allow exploration of numerous issues of critical importance today as higher education responds to the call for change in the way it educates students. The campus-wide wireless initiative was launched by the administration in the summer of 2001 and is being implemented by Network Services. The Innovative Technology Center brings together faculty development specialists, instructional designers, network and programming specialists, and graphic designers, to serve the pedagogical needs of the entire faculty. The College of Arts and Sciences, traditionally underserved in terms of access to technology, offered us access to traditional faculty who had expressed a desire to explore new pedagogical possibilities.

University Wireless Initiative

An administrative push for a wireless campus network had created the context within which the project unfolded. In the summer of 2001, The University of Tennessee was launching one of the largest 802.11b wireless initiatives in the United States based on number of access points, and the WISH project was developed concurrently. (For more information, please see <http://wireless.utk.edu>). This simultaneous development of initiatives, one technical and one pedagogical, added to the challenges we faced, but also offered extraordinary opportunities to observe how faculty and students function and adapt in an experimental environment. One of the first casualties of the project was the collaborative networking software, whose primary purpose was to permit the instructor to call up a student's screen onto the laptop connected to the projector. As Network Services added security layers to the wireless rollout and as they expanded the subnets, the collaborative software proved unable to negotiate clients on a network that dynamically assigned IP addresses to individual machines. The software had functioned well in a static IP environment, but simply collapsed when dynamic host addressing was introduced. However, it had functioned long enough to allow us to see the enormous potential for true exploratory sharing. In their Final Reports, several WISH participants referenced the teaching potential of this software, so our search for that particular tool continues. A positive convergence emerged from the classroom renovation project that was occurring concurrently. Smart classrooms were being created across campus, and our participants saw a concerted University effort to provide technology-enhanced learning environments for instructors and students.

In addition, the wireless cards often experienced difficulty when they tried to connect to the network through a malfunctioning access point. Unfortunately, the task bar icon which indicated a network connect was not discriminating enough to know that the access point was not offering "access" to the Internet. The network monitoring software also gave false positive readings for these "live" but malfunctioning access points. Much frustration and confusion ensued. Trouble-shooting these early obstacles proved time-consuming for our network specialists and frustrating for the instructors who simply wanted the technology tools to work.

Innovative Technology Center

The WISH Pilot Project was framed from the very start as an exploration of how to redefine the traditional classroom in a networked environment as well as the diverse support issues surrounding the University's wireless initiative. We invited faculty who wanted to establish innovative teaching practices and explore research possibilities related to implementing wireless computing in a classroom setting to apply for participation. We asked what the classroom might look and feel like when powerful computing potential was wedded to collaborative activities, specifically designed to challenge students to critical thinking and problem-solving. Unlike traditional grants, this call for proposals was open-ended in unusual ways. We asked for faculty willing to re-examine their traditional teaching strategies in the light of new possibilities offered by mobile, networked classrooms.

Supporting the project successfully involved a group of professionals with a wide range of expertise, a shared desire to expand definitions of teaching and learning, and a commitment to customer service. The implementation team consisted of the Director of ITC with her humanities background behind a doctorate in instructional technology, our technologies integration specialist, a web instructional technologist with a strong humanities background, and a program coordinator who handled technical

issues, group communications, and the complexities of scheduling the two carts filled with laptops. In addition, the program coordinator did in-class training on the use of the laptops and the network, thus freeing faculty to concentrate on reframing the learning environment. Brainstorming sessions had launched the project and the team met regularly to deal with the issues as they arose.

College of Arts and Sciences

“Deep, hands-on learning through research is commonplace in the sciences, but it is more challenging to design these experiences for students in the humanities.” (Brown, 2000, p. 222). Our project was deliberately crafted to examine the pedagogy as well as the mental maps of traditional instructors whose previous access to technology-rich environments had been limited. Thirteen faculty from Modern Foreign Language and Literature, Political Science, English, History, Philosophy, Religious Studies, African-American Studies, and Human Services were chosen to participate in the project. The courses impacted ranged from “Images of Jesus” in the Department of Religious Studies to “Introductory Conversational Portuguese” in the Modern Foreign Language and Literature department. Several WISH team members possessed strong humanities backgrounds and were intrigued by the idea of developing workshops to transition traditional faculty to new ways of constructing learning experiences in a networked environment. After putting out the call for proposals to this college and establishing project parameters, we then developed the WISH Institute to frame the key issues and open the dialogue. We now faced the conceptual challenge of moving instructors from lecture and face-to-face discussion paradigm to new ways to engage their students with course material. A shift in the structure and interaction in the classroom challenges faculty in two ways: their comfort level with the technology itself and their comfort level with new ways of designing and implementing learning activities.

Project Requirements

The call for proposals asked about faculty willingness to innovate and to explore current pedagogy with an eye to transforming it. The call asked about current uses of technology in teaching and thoughts on potential for change. From the pool of proposals we selected only 14, based upon our ability to offer ideal support as well as upon the energy and commitment we sensed in their writing. In addition, we deliberately chose faculty with diverse skill levels. The selected faculty received a fully equipped wireless laptop, a suite of software tools, and a stipend. In return they were required to commit to the project requirements.

- Integrate wireless laptops in your course for a minimum of 1/3 of the semester.
- Participate in the WISH Summer Institute. The WISH Summer Institute will require six hours of core classes (to be held at ITC) and ten hours of individualized training (that can be defined through flexible learning opportunities). The core classes will address technical, instructor-centered, and student-centered strategies. The individualized training will focus on reshaping the curriculum and content in order to make maximum use of networked resources.
- Attend bimonthly meetings with the ITC WISH Implementation Team (WISH IT) to be held for the duration of the project.
- Conduct student assessment at the end of the Fall 2001 term. ITC will provide the basic assessment tools.
- Participate in a WISH Faculty pre- and post-project assessment.
- Submit a final report.

WISH Institute

The WISH Institute held in the summer of 2001 directly addressed the challenges of weaving collaboration and connectivity into the traditional classroom. After surveying participants to identify their comfort level with software, hardware, and networks, the implementation team developed three courses to address pedagogical and technical issues and prepare the foundation for our research interests. The first course, “Technical Strategies for Wireless Laptops,” focused on basics of handling, maintaining, and using a laptop computer. Issues included battery charging, hooking up projectors, and mobility across campus subnets. Participants discussed multiple log-ons, the realities of shared bandwidth, and explored classroom

management issues. Laptops were stored on a “mobile” cart, but the term “mobile” was a stretch and negotiating crowded hallways and multiple floors challenged the instructors as well as the support staff. Each cart contained 16 PC laptops and one projector.

The second course focused on “Instructional Strategies for the Wireless Classroom.” The University uses Blackboard as its course management system and our Institute addressed some of the built-in tools. Participants explored strategies for maximizing use of networked resources, from managing email to receiving assignments via the digital dropbox in Blackboard. We discussed how to manage increasing numbers of email messages to designing a discussion forum topic that would engage students in dynamic, professional discourse. We examined strategies for integrating the Web into the classroom environment. We went on virtual field trips and used a web-page archiving software to capture a website to the hard drive, in case of connectivity failure. Noted one WISH participant, “I have also learned and have re-committed myself to the notion of planning back-up lessons. When working with the wireless, my thought is that three backup plans are necessary....” (Woodside, 2001).

The final course, “Collaborative Models in the Wireless Laptop Classroom,” explored ways to group students for effective collaborative work through issue groups, triads, and collaborative writing teams. We shared possible methods for assigning students individual roles based on divisions of labor to enhance learning. Participants ventured on a “webquests about webquests,” in order to experience both the structure of a webquests and the way it felt to work collaboratively toward an end product. One of the key obstacles to faculty adopting collaborative, problem-based learning is the challenge of assessing both the process and the product, so we assembled readings and samples of assessment tools to address this potential barrier.

In addition to the six-hour WISH Institute, faculty were asked to schedule an additional ten hours of customized support, based on their curricular plans and their levels of expertise. Paul Hagner has noted that “many faculty, especially the Risk Aversives, need flesh and blood support to make their transformation.” (Hagner, 2001). The WISH implementation team provided that “flesh and blood support” to assist these instructors in transforming their teaching as well as the learning environment.

Conclusions

We had initiated an ambitious project and garnered many insights from our experiences. Our greatest insights and understandings came from carefully watching these faculty members as they moved through the experience. Our recommendations emerge from a careful examination of the project as an experiential whole. Two major categories deserve addressing, technical and teaching/learning.

In the technical arena, expect heavy support demands and meet each demand with patient attention. Always expect the unexpected. The recognition of the false positives on connectivity did not emerge until we began to deconstruct the entire project, in search of areas to address in the next iteration. In addition, we would caution that you be very selective about the software that is included in the package for faculty and students. Two critical pieces of software, the collaborative networking software as well as the networked writing environment software, did not function as advertised, causing mutual frustration all around. In addition, the critical website capture tool did not function as efficiently as we had hoped as a backup tool. Increasing faculty comfort level with these new tools is essential. Student comments at the close of the project indicated that they were keenly aware of the impact on the learning environment of a faculty’s readiness to use technology tools effectively.

In the area of teaching and learning, we recommend staying focused on pedagogy, instructional design, and multiple strategies for using the tools, even as the project seems enmeshed in technical challenges. Deliberately create community around the project and plan for its continuation. Only through rich dialogue will we move together into the future. Communicate constantly with all stakeholders, using all the tools available, from the ubiquitous email to discussion forums, to bi-monthly debriefings, and micro-teachings where successes are shared.

Success can be measured in many ways. Thanks in part to the range of faculty skill levels, we were able to note a wide range of successful learning strategies. One technically literate faculty member restructured an entire course around the wireless laptops. She comments in her final report, “I thought about why I was doing what I was doing in the classroom, right down to the last detail” (Kelly, 2001, p. 1). Another instructor used the brainstorming tool, Inspiration, for a collaborative exercise within one class. His initial, small success allowed him to be more aware of the possibilities for enhancing language learning with such tools.

As James Ellsworth notes, “When change is being driven by changes in the society around us (a suprasystem), we must be willing to rethink everything about the way you teach and learn (Ellsworth, 1997, p. 6). The WISH project, with an ambitious team of four ITC members, began the journey to identify the training that would empower the traditional faculty who have long been the mainstay of our universities to become the innovative teachers of the next generation. The task is urgent; the challenge formidable, and the journey exciting in every way.

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