

Introduction

Project Jericho, funded in 1999 by a PT3 Implementation grant, used many of the same tools as other implementation grants: collaborative curriculum development, technology skills development, technologies tied to specific classroom needs, and mini grants to support partnerships between K-12 teachers and university faculty—preferably Teacher Education *and* Arts and Sciences faculties. Jericho also achieved the same overall program goals as other projects, enhancing the use of technology in K-12 classrooms by enhancing its use in university classrooms where teachers are trained.

What happened in between, however, was different. Jericho provided virtually no direct technology training, rejecting the frontal-assault model used by many other PT3 implementation projects and employed for decades at the K-12 and university levels to build teachers' skills. And, although some of Jericho's most concerted efforts and lasting accomplishments came in building partnerships between K-12 teachers and university faculty—*especially* Arts and Sciences faculty—these were the natural outgrowth of a more important, fundamental goal: a change in mindset.

In developing the Jericho model, we knew that to really transform learning through technology integration, K-12 teachers and both teacher education and content area faculty needed to start talking, to engage in an extended conversation about the complex issues related to effective technology integration. Everything else proceeded from this sense of community. This chapter looks at how we defined the Jericho model, and how successfully we implemented it, with Clemson and Furman University faculties and area teachers in Years 1 and 2, and, in Years 3 and 4, with faculties in and around seven other South Carolina colleges and universities who, tried to adopt the model. The chapter concludes with a look at the long-term impact of the project, and a review of what we learned about community-building and providing effective professional development.

What was the Jericho model?

Jericho created a model for professional development based on dialogue, sharing, and the notion that the best way to improve pre-service education was to tear down the walls that separate university faculties from classroom teachers and from each other. In Years 1 and 2, Education and Arts and Sciences faculty members from Clemson and Furman joined local elementary, middle school, and high school teachers in cross-grade Innovation Teams, formed by content area. The teams met monthly, charted their content curriculum K-16, mapped the appropriate use of technology across K-16 for their content area, and created technology-rich lessons. The collaborative lesson development took place against a backdrop of thought-provoking discussions of technology, curriculum and standards. This dialogue—arguably the most important project activity—changed minds as well as skills and syllabi, and led to lasting relationships and lasting changes in institutional culture.

We used four “tools” to dismantle the walls among the various groups: the power of an emerging professional learning community, specific lesson development tasks, the technology standards for teachers and students, and multiple forums for discussion and collaboration.

A Professional Learning Community. During the initial meetings with the Year 1 and Year 2 cohorts (approximately twenty-four in each), we posed a question that framed the work of the project and threw down the gauntlet: What technology skills and subject matter knowledge should future teachers, from kindergarten through college, acquire to enter the classroom fully prepared to teach? As participants pondered this question, others emerged: What constitutes effective modeling? What changes in practice and policy would ensure that technology enriches all phases of pre-service programs—not just stand-alone technology classes but Literature, History, Biology, and Math classes, and the full range of required methods classes?

The process of wrestling with these issues delivered the critical blow to the walls that separated the three “parts” of what NCATE calls the teacher education unit: content faculty, teacher education faculty, and K-12 teachers. This process transformed an informal community and monthly discussion groups into a real learning community and produced the rich dialogue that most participants considered Jericho’s most rewarding feature. Even in this, Jericho did not take a predictable course. DuFour and Eaker (1998) suggest that strong, effective learning communities need a “sense of urgency” to bring about fundamental changes in school cultures. While participants certainly felt that Jericho’s mission was important, the Jericho community didn’t always operate with a sense of urgency. That might have made faculty members used to the thoughtful deliberations of scholarship uneasy. Jericho gave participants ample time to visit and revisit the complex (and often institution- or department-specific) issues involved in establishing the “essential conditions.” Although changes in institutional culture did eventually come about, these were, like technology skills, by-products of broader goals.

Jericho also began with some intentional inequities in its professional learning community (a secret ingredient to the charges used to blast the walls) counter to some notions of how communities should be composed. Several K-12 teachers were Technology Innovation Challenge Grant veterans with substantially more technology experience than their higher education counterparts. This imbalance off-set the belief of a greater sense of professionalism that university professors brought to the table, and in the end made for a more equitable professional learning community, but it initially challenged some of the principles of equitable composition. Other strains were inherent in the groups’ curriculum focus. The English and language arts group, for example, debated at length whether their discipline’s primary content was language and literature or broader process skills such as communication and expression. This constituted the productive dissent some theorists argue for— the

“essential tension of teacher community”—but the strains had to be eased for the community to coalesce (Grossman, 2001).

Innovation Team Tasks. In order to concentrate the first blows to the walls, the extended conversations among professionals needed a focus. Innovation Teams started to build their communities by addressing what they had in common—the curriculum. Teams (Language Arts and Social Sciences in Year 1, and Mathematics and Science in Year 2) studied their full K-16 curriculum sequence, an exercise that few had ever engaged in before. One history professor, overwhelmed as high school standards were reviewed, exclaimed, “My gosh, if my students came to me knowing half of all this I would be delighted! How can you possibly teach all this?”

Then, as the walls began to cave, each team selected a strand around which to design lessons for elementary, secondary, and post-secondary students. The Year 1 Social Studies group, for example, chose *Scarcity and Choice*; the Year 2 Math group, *Patterns*. In and between meetings, and during the summer, teams developed and reviewed lessons and created plans for internal and external dissemination. This collaborative process ensured that lessons met state content standards and incorporated technology in meaningful ways. Their use in methods and content classes on campus and in field experiences off campus ensured that prospective teachers would see how technology could be used effectively.

Technology Standards and Embedded Technology Skills. Many PT3 projects looked for ways to bring university faculties up to speed on technology skills and create more effective technology classes for pre-service teachers. As noted above, Jericho embedded skills training in broader discussions to break down the walls between teachers, teacher educators, and content faculty. The official references for these discussions were the newly published National Educational Technology Standards (NETS) for teachers and students. Other points of reference, which in many ways provided a more practical

compass for Jericho participants, were the rich classroom-tested ideas that K-12 teachers brought to the table. As teams identified strands and worked on lessons, they were simultaneously introduced to the ISTE NETS standards for teachers and students.

A special insight emerged when participants reviewed what ISTE called the “Essential Conditions” that need to be in place to reach technology integration standards: Most schools and universities have major holes in their infrastructure. Jericho’s leaders drew on experience gained from ongoing discussions of national technology in education standards (NETS), recent local technology innovations, and changes underway in pre-service programs at both universities. Teams were then asked to develop a K-16 technology matrix that identified each grade level’s appropriate technologies with an expected level of use. Discussion was lively as many university faculty were surprised at the early levels of sophisticated technology use and the expectations that many K12 teachers held. One teacher education faculty member explained, “Good heavens! If my pre-service teachers are going to be teaching children who are doing this, then I better make sure my students can do that!” Understanding Essential Conditions was an important realization that helped participants understand some of their frustrations and target what needed to be done in their school, department, district, or university. Year 3 and 4 participants also found this very useful.

Multiple Forums. Monthly meetings gave K-16 teachers a rare opportunity to come together to address the many complex questions about how to use technology to improve pre-service education. In addition to these face-to-face meetings, several other tools—email, summer egroups, listservs, and online forums—were available to support collaboration across disciplines, across faculties, across grades K-16. These were the avenues that broke through the walls that separate preparation from practice. Jericho project leaders also encouraged cross-school visits and other dissemination activities to extend collaborations beyond each cohort’s official year in the project.

What did not work and why?

As a technology project, we were very excited about the use of electronic forums to maximize communication and stimulate discussion. After all, e-mail and IM are now mainstays of our culture, so surely if we structured a discussion group on-line that would be effective. In Years 1 and 2 that proved not to be the case. Getting people on-line was the problem: people were busy. When we got them together, away from their classes and offices, they loved discussing all the issues. When we asked them to take time away from their teaching and lives to go on-line, they most often did not. Even with the high level of community created in Years 1 and 2, this approach with assignments and discussion topics was marginally helpful to only some.

In exploring the limited success of the online discussions, we learned as much about what did work as what did not. Some participants said it was not so much the format of the online forums as the content, and noted that the online discussions, in contrast to meeting discussions, felt artificial, an obligation, more like call-and-response exchanges rather than genuine, meaningful discussions. Precedence was also important: K-12 teachers with a history of sharing, or university faculty who had collaborated on articles and projects (i.e., no walls), were more comfortable collaborating online than those for whom collaboration was not part of the culture (i.e., walls existed). Participants communicated more, both offline and online, with those in their field than with those outside their field or grade level.

A sense of community seemed to be at the heart of all this. The face-to-face meetings were successful because they gave participants the time and support to *gradually* develop relationships. The online forums began soon after the first meetings themselves, and participants had not developed the trust necessary for productive online discussions. Relationships did develop, but exporting them to an online environment was hard. As participants became more comfortable with

electronic sharing, they did begin to use egroups to share progress on lesson development, and email to circulate lessons and responses.

One K-12 participant observed that “The irony, I believe, in this technology project, is the wonderful way it has given us an opportunity to connect with other people. Though I enjoyed the online collaborations, the face-to-face meetings were the ones that provided the most intellectual stimulation and excitement. Our meetings were not technology workshops; rather, they gave us the chance to argue the philosophy behind much of what we do with technology.”

Exporting the Model: Years 3 and 4

What we learned from our experience with online forums was paralleled in what we learned in exporting the Jericho model in Year 3 and an extension Year 4, when seven other institutions around the state tried to adopt the Jericho model. Once again, the teams struggled to effectively use the online forums. When small groups were working together, they did report using e-mail and e-groups, so the medium was not the problem.

The missing factor was a sense of community. In Year 3, the lack of community extended to the face-to-face meetings, and the seven schools were not able to replicate the success of the Years 1 and 2. Some of the challenges stemmed from a lack of experience and training; the foundation that proved essential in Years 1 and 2 was not yet there. Leadership was also an issue: Most sites lacked a prime, personal leader, a motivator, a link for participants. Nor did they have the dual, shared leadership provided in the first two years by the strong university and school components. The more modest scope and scale limited success as well. We had recommended that new sites convene teams of seven, but these were too small, meeting attendance too varied, and meeting length too short. The Year 3 sites did not have access to a sizable group of K-12 teachers with impressive technology experience, or as much time to get to know one another and the luxury of thoughtful, discursive dialogue that

gradually helped establish a learning community among the Year 1 and 2 participants and break down the proverbial walls. The issues were important, but not important enough to override the day-to-day stress and importance of teaching and its preparation and tasks; some sites were also preparing for NCATE reviews.

All this generated a lack of cohesion and commitment among teams, which, combined with the problems of on-line forums mentioned previously, led us to abandon the planned model within six months of Year 3 in favor of a “help them where they are” approach to general faculty/teacher development sessions.

Our experiences in exporting the model again confirmed that community building was critical in the development of a mind-set, a confidence, and an attitude of technology innovation in teaching. At the end of the fourth-year extension, some sites were beginning to see the start of an evolution. “I think it will take time for all the changes to occur,” observed one participant, “but the key is, I do see changes occurring. Faculty members who were sooooo hesitant to even try technology of any type now seem to be attempting to implement some type of technology into their curriculum.”

What did work? The legacy of Years 1 and 2

Jericho’s most consistent and lasting accomplishment was its success in starting a dialogue among K-16 teachers. Jericho was a unique, eye-opening experience that gave participants a better understanding of the challenges and goals they share. As one participant noted, the project “.... made me aware of the connectedness of all levels in the field of education....” Sharing expanded participants’ skills and confidence and their repertoire of everything from useful URLs to lessons to national technology standards. This dialogue changed minds as well as skills and syllabi, and led to lasting relationships and lasting changes in institutional culture.

In spite of having virtually no direct technology professional development, and spending a good bit of time on discussion and reflection, Jericho increased technology confidence and skills and had an impact on individual faculty behavior for teaching using technology. Over half the participants from both years reported that their proficiency with computer basics, spreadsheets, telecommunications, databases, and presentation software increased; even their skills in installing software and trouble-shooting problems increased. Participants also credited Jericho with growth in other technology-related areas—incorporating technology into classes and curriculum, modeling technology for students, finding online resources, selecting hardware and software, partnering with K-12 teachers, and understanding ISTE standards for teachers and students.

Jericho changed participants’ perceptions and attitudes about the teacher education “unit.” Higher education faculties gained a clearer sense of what K-12 teachers do, while K-12 teachers gained a greater sense of professionalism in integrating technology into their teaching.. One Clemson participant said that Jericho “enabled me to see that K-12 classroom teachers were out there using technology (i.e., 1st and 2nd graders using digital cameras!) and that their students were producing presentations that made mine look so elementary—I realized that we must prepare our pre-service teachers better with respect to technology.” As one teacher observed, “I finally felt like a real professional during my Jericho meetings.” Jericho “allowed public school teachers to finally have a voice in the education of pre-service teachers. It provided a forum in which educators at all levels could interact and learn from each other.” “The project gave me an opportunity to network with like-minded teachers and to make meaningful, fruitful connections with Furman and Clemson colleagues.” Several participants concurred with the teacher who called Jericho “the most rewarding professional development experience” of her teaching career.

Jericho expanded participants' knowledge of academic and technology standards.

Jericho helped participants—especially higher education participants—understand what was expected of teachers and students. As one professor noted, “Project Jericho made me aware of not just the state [curriculum] standards, but national technology standards.” Many university faculty who teach introductory content courses to education students learned about state standards through the project and have engaged them in their teaching. A number of the higher ed participants, most of whom were unaware of both state academic and ISTE standards, have introduced pre-service students to these in their courses and also aligned the courses themselves to ISTE guidelines. The value of the new information about ISTE standards came up frequently in Years 3/4 interviews.

Long-lasting impact?

A final measure of success for a project designed to promote collaboration is the degree to which productive relationships are sustained, and the changes set in motion during the project outlast it. The Year 1 and 2 participant follow-up data suggest that both are true of Jericho. In a survey conducted in Year 4 of the project (3 years after the first cohort participated and 2 years after the second cohort's involvement, 91% of those responding said that Jericho made them think differently about the way they model technology in their teaching. Only slightly fewer (81%) said that participating in Jericho resulted in their encouraging colleagues to integrate more technology into the curriculum, or to rethink policies related to technology. Participants also gained confidence in modeling good technology use for pre-service teachers and increased their integration of technology into instructional planning, creating syllabi, finding courseware, and into instruction itself, with over 80% saying this was due to project participation. Most were still using lessons developed during Jericho. Citing gains more directly related to project activities, two-thirds of the participants found that they were much more confident in finding online resources and participating in online professional development—100% credited Jericho. In the

retrospective surveys and interviews, participants provided examples of sustained collaborative activities.

Collegial relationships initiated through Jericho continue to yield benefits through long-term collaborations, ranging from casual contact and sharing, to presentations at conferences, to co-authoring books. Those who were most involved all along continue to draw on the insights gained from Jericho in activities such as career changes; advanced degrees; National Board Certification; trying out new technologies like digital cameras, computer-connected scientific data collectors, or Blackboard; instituting "a distance-learning course for teachers that involves interactive-TV and web-based course management"; having students submit assignments on-line; recommending websites that complement class topics, incorporating technology into the writing of a new mathematics text; initiating new projects and writing grants that they would not have undertaken had it not been for Jericho; further visits and sharing with Jericho colleagues; collaborative curriculum development; presentations to colleagues at workshops or conferences nationally or locally; increased technology coursework, technology committee work, and pre-service program planning; and impressive awards such as Education's Unsung Hero awards from ING, which honor 100 educators nationally who pioneer new methods and techniques that improve student learning, and National Board Certification and finalist for the 2003 Presidential Award for Excellence in Mathematics and Science Teaching, operated by the National Science Foundation.

Conclusions

In the short run, PT3 was and is all about increasing technology integration into teaching. As the data showed, even without direct skills training, Jericho achieved that objective. Though it took a different route than many PT3 projects, Jericho achieved its goals of helping to bring pre-service programs at Clemson and Furman Universities, and at the Years 3/4 sites, into compliance with the

ISTE standards; developing a matrix of appropriate technology uses aligned with standards, and building lessons around these; responding to demands for technology awareness and applications from students; and enhancing syllabi and field experiences with technology. The sharing, the dialogue, and the collaborative lesson development gave prospective teachers more examples of effective, innovative uses of technology throughout their learning experiences—in methods classes, in academic courses, and in field experiences—and ultimately inspired changes in instructional practice and institutional culture needed to address the fragmentation often cited as hampering teacher preparation programs (Bransford, p. 204).

It is hard to find testimonials from teachers or faculty that attribute major activities, major growth, and/or major changes to a specific professional development experience. It is even harder to find those testimonies testimonials still giving credit for continued changes three to four years later. Yet that is exactly what we found for many of the Jericho-ites. Participants still speak of Jericho with excitement and admiration: many K-12 teachers, most of whom have a long list of professional development experiences to their credit, call it “the most rewarding professional development experience” of their careers. Higher education faculty, who might not be expected to put this kind of project in the same category as their own professional conferences, likened Jericho to stimulating academic meetings where ideas take shape. Interview data suggests that community building was critical in the development of a mind-set, a confidence, and an attitude of technology innovation in teaching. As one participant observed, “The experiences in Jericho were enhanced because we had K-12, education faculty, and arts & sciences faculty all working toward the same goals. That was a feature of Jericho that I believe has paid great dividends. I took away an understanding of how powerful it is for teachers to work across the curriculum and grade levels.”

The PT3 program included two kinds of grants: implementation grants, awarded to projects designed to increase faculty technology proficiency and use, rework curriculum and requirements, and enrich practice with technology, and catalyst grants, which set out not so much to redesign programs as to initiate them, to “move a program to the next level” in developing the effective integration of use of technology in teaching and learning. Jericho turned out to be both: in Years 1 and 2, implementing at Clemson and Furman Universities, and Years 3 and 4, moving seven additional sites across South Carolina to their next level of technology integration. Though we may not have successfully exported the model, we did, through the experience of all four years, learn some important, exportable lessons about building communities and designing effective professional development:

- 1) Start by creating a community—break down the walls between content faculty, teacher educators, and K-12 teachers.
- 2) Use regular face-to-face meetings and content issues to initially break down the walls.
- 3) Create the community over time and support it for at least a year, preferably longer.
- 4) Move to on-line supports only for direct classroom/course applications that arise from participant needs.
- 5) Have strong leaders from both the university and the classroom sides—leaders who can encourage and make connections between individuals and between teaching and technology.

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