THE TEACHER EDUCATION VILLAGE: GROWING PARTNERSHIPS TO INTEGRATE EDUCATIONAL TECHNOLOGY INTO CURRICULA AND CLASSROOMS

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In her book *It Takes a Village* Hillary Rodham Clinton wrote, "Children are not rugged individualists. They depend on the adults they know and on thousands more who make decisions every day that affect their well-being" (Clinton, 1996, p.7). Although Clinton is writing of raising children and the importance of family and community in this process, similar statements could be made about teacher preparation. "It takes a village" to produce educators qualified to meet the complexities of 21st century classrooms and many give explicit attention to collaboration among members of the "village" (Holmes Group, 1986; Goodlad, 1994; Sirotnik, 1999; Sirotnik & Goodlad, 1998). In fact, the U.S. Department of Education's "Preparing tomorrow's teachers to use technology" (PT3) program emphasized the use of partnerships to effectively promote technology integration in the daily practices of future teachers.

This article explains and analyzes a four-year, ongoing effort to facilitate effective uses of educational technologies in a large teacher preparation program via partnerships between the university and public schools and between colleges at the university. The research question – *How can diverse partnerships related to technology integration facilitate effective uses of educational technologies within a "village" responsible for preparing prospective teachers?* – is situated within our Teaching and Technology Initiative.

TEACHING AND TECHNOLOGY INITIATIVE

The Teaching and Technology Initiative (UFTTI) was designed as part of the US Department of Education's PT3 program to facilitate and accelerate systemic change related to technology integration in our teacher education program. Two of the major goals of this initiative were to provide innovative opportunities for faculty development related to technology use and to develop stronger curriculum-based, technology-enhanced field experiences for our prospective teachers. While each of these goals required different partnership strategies, Stephens and Boldt (2004) state that, in general, partnerships are problematic in nature because of the difference in the rhetoric and reality of partnerships. They note that school and university personnel are frequently not prepared for the intimacy required in building partnerships with trust, mutual respect, and a common vision.

Recognizing the complexities associated with partnerships, we relied on a variety of literature to inform our work. We explicitly focused on factors related to change within the teacher education program at large, change by individual educators (public schools and at the university) within partnerships, and change in the teaching and learning environment. We selected three educational change models to guide us. The CREATER model (Havelock & Zlotolow, 1995) helped us consider change at a systemic level, the Concerns-based Adoption Model (Hall, 1973) provided guidance related to change at an individual level, and the Conditions of Change (Ely, 1976) focused on environmental factors related to change. The partnership described below result from consideration of these various educational change models.

PARTNERSHIPS IN THE UFTTI

The partnerships highlighted in this article are between the university and public schools (i.e. Curriculum-based, technology enhanced field experiences) and between colleges at the university (i.e. Teaching and Technology Teams). Partnership participants included public school teachers and administrators, College of Education (COE) faculty, College of Liberal Arts and Sciences (CLAS) faculty, prospective teachers and graduate (master and doctoral) students. Members from each of these groups comprise key players in our "village" responsible for preparing prospective teachers.

Teaching and Technology Teams

One of the goals of the Teaching and Technology Initiative was to provide innovative professional development opportunities for faculty. Because teacher education students participate in courses throughout the university community, it was important to form partnerships with departments in various colleges so students could see modeling of technology in teaching in all of their courses—not just in traditional technology courses. Partnership opportunities that assisted faculty in becoming fluent in the use of educational technologies

appropriate for their specific content and context were needed. This meant moving from general training on software and equipment toward content-specific, technology-based instructional strategies for the curriculum. Hence, negotiations began with the Deans of the Colleges of Education and Liberal Arts and Sciences, department chairs within these colleges, faculty, and doctoral students to insure this vision was supported and sufficient time and resources were allocated to the potential partnerships. It was also critical to ensure the partnerships were beneficial for each college, department, faculty members, and doctoral students.

These efforts resulted in the formation of eight Teaching and Technology Teams. Technology Fellows, education doctoral students, were paired with a faculty member in the College of Education or College of Liberal Arts and Sciences. These pairs worked together consistently for two to three academic years up to 15 hours a week. The Fellows shared their knowledge of integrating technology while the faculty members helped the doctoral students understand the role of a professor at a research I university. Faculty members received a 10% workload credit each semester for participating in the partnership as well as $1,000 an academic year to purchase supplies, equipment, and/or software that would assist them in the integration of educational technologies into their courses. Partnerships were formed in the areas of science education, English education, children's literature, and early childhood education from the College of Education, and German, physics, chemistry, and calculus from the College of Liberal Arts and Sciences. Over the past four years, the partnerships influenced over 5,300 students, many of whom were preservice teachers.

Because of the extended time, resources, and support provided to the Technology and Teaching Teams, faculty continue to use technology in their teaching and to create or use new instructional strategies that facilitate better student understanding of the content in their courses. This is occurring even after Fellows move on to different stages of their professional careers.

Curriculum-based, Technology-enhanced Field Experiences

Another major goal of the Teaching and Technology Initiative was to strengthen the technology-based field experiences for preservice teachers. This required providing preservice teachers firsthand experience integrating technology in K-12 classrooms. Again, negotiations took place to ensure that participants in the partnership had appropriate and adequate time, resources, support, and a common vision for this goal. Beginning with district personnel and branching to principals, negotiations began on the possibility of forming these partnerships. After initial agreements were reached, discussions with inservice and preservice teachers took place. Preservice teachers were then paired with inservice teachers in local schools to collaboratively develop and integrate curriculum-based, technology-enhanced activities. These partnerships were based on the notion of collaboration rather than on an expert/novice relationship. The teachers' experiences and knowledge (particularly, their knowledge of how classrooms work) were combined with the preservice teachers' experiences and knowledge (particularly, their knowledge of how technology may be used in instruction) to develop instructional environments useful to the inservice teacher and improve both partners' ability to integrate technology into the curriculum. The goals of the partnership included:

- Providing inservice teachers with an opportunity to explore instructional applications of educational technologies in their own classrooms
- Providing preservice teachers in-depth experience with the use of educational technologies in a classroom setting, and
- Developing positive relationships between local public schools and the university

Over the last four years, 39 preservice teachers have collaborated with 42 inservice teachers to implement nearly 50 curriculum-based, technology-enhanced field experiences that have influenced over 1,000 K-5 students in eight different elementary schools.

PURPOSE OF THE STUDY

Each partnership has been researched separately in terms of effectiveness, impact and participant perceptions (author a, in press; author b, 2004, authors a & b, 2003). The purpose of this study is to look at these partnerships in tandem to answer the question - *How can diverse partnerships related to technology integration facilitate effective uses of educational technologies within a "village" responsible for preparing prospective teachers?* Lessons learned and implications for teacher educators are drawn from the analysis to provide guidance to others interested in similar partnership work.

METHODOLOGY

A variety of data collection methods were used throughout the four years of these partnerships and contributed to the analysis conducted for this study. Methods included interviews and/or focus group sessions with all

participants, document analysis of artifacts created during the partnerships, observations, reflective journals from doctoral students and prospective teachers, and surveys. As the co-principal investigators for the Teaching and Technology Initiative, we also used reflective notes taken throughout the four years of the partnerships.

To analyze this wealth of data we used qualitative analytic procedures (Rossman & Rallis, 1998). First, we read through the data (with which we were already familiar with from writing other articles and completing grant reports) paying explicit attention to the research question - *How can diverse partnerships related to technology integration facilitate effective uses of educational technologies within a "village" responsible for preparing prospective teachers?* Then, we began recording themes that emerged from the data related to this question. We triangulated our initial impressions through scholarly discussions and established four themes. Finally, with an eye toward making the categories "concrete," we read through all the data again and extracted salient "snippets and segments of data" (Rossman & Rallis, 1998, p. 180).

FINDINGS

The following themes emerged from our data analysis and will be presented in detail in the following sections. While all partnerships are contextually based, we believe other teacher educators will benefit from considering our themes as they work within their unique settings.

1. These partnerships impacted our teacher education "village" in ways that would not have been possible otherwise.
2. The importance of relationship building and its effects on culture and context were evident through the partnerships.
3. Reciprocal mentoring was an outcome of these partnerships that strengthened our teacher education "village."
4. Increased professional activity was an important outcome of the partnerships and helped disseminate ideas to others.

These partnerships impacted our teacher education "village" in ways that would not have been possible otherwise.

Teachers tend to teach as they were taught (Lortie, 1975) and these partnerships enabled preservice teachers to see technology modeled in both COE and CLAS courses (via Teaching and Technology Teams). The partnerships also enabled preservice teachers to have authentic experiences incorporating technology in K-12 environments (via curriculum-based, technology-enhanced field experiences) and such authentic experiences are essential for preservice teachers to become technology-using inservice teachers (Strudler and Wetzel, 1999).

New curricular units incorporated into COE and CLAS courses included the instructional use of online databases, video case studies, concept mapping software, personal response systems, discussion boards, digital microscopes, scientific probes and general software applications such as those found in the Office suite. In addition, three new courses in which technology is modeled as an instructional tool were created.

Within the field experiences, preservice teachers implemented nearly 50 curriculum-based, technology-enhanced projects. Many of these projects involved K-12 students using a variety of technologies such as concept mapping software, digital microscopes, general applications such as those found in the Office suite, digital video, and Smart Boards to synthesize content in a multimodal fashion.

We can confidently claim that the tangible results described above would not have been possible without partnership strategies and that the accompanying shift in mindset related to technology integration by partnership participants would not have occurred. One elementary principal noted the partnerships helped his teachers get into the "the mindset of integrating technology in their day-to-day instruction." Likewise, a teacher educator stated her students began to see the use of educational technologies in her courses as "a shift in ideology and value" rather than as an unnecessary addition to the course. There were different objectives for and outcomes from the partnerships, however, each contributed to integrating educational technologies into learning environments for preservice teachers in ways that would have not otherwise been possible.

The importance of relationship building and its effects on culture and context were evident through the partnerships.

Partnerships are built on relationships that take time and effort to cultivate. In fact, nearly all participants mentioned the importance of relationship building as evidenced in this quote from a Fellow:

> Dr. X and I have mostly worked to develop trust between us. I think we have that now and are freely sharing ideas with each other and trust the dependability of each other and are working on new simulations for the Chemistry labs.

Participants also recognized the effect these relationships had on their culture and context. That is, they recognized the relationships they built influenced those around them. For example, one inservice teacher stated,

> The real influence [of the partnership] is the fact that as a teacher I am using the technology and other teachers are seeing this example. Technology use motivates teachers in my view. It is more of a responsibility to use technology than a competition. Technology inspires questions and curiosity in teachers. Teachers catch the spirit when they see other teachers using the technology.

Likewise, a university faculty member envisions that as a result of the work started in these partnerships "all of our classes would look different… as students move from one course to the next; they would see technology integrated in different subjects in meaningful ways." In many ways, our four-year initiative has been about building capacity for technology integration within our teacher education village one relationship at a time.

Reciprocal mentoring was an outcome of these partnerships that strengthened our teacher education "village."
These partnerships were designed to promote reciprocal mentoring or a model in which partners learn from and provide knowledge or assistance to each other. The concept of reciprocal mentoring related to technology integration is not new, however, successful implementation is never guaranteed (Maeers, Browne, & Cooper, 2000). Our data suggests that reciprocal mentoring did occur throughout these partnerships. An inservice teacher stated that

> The preservice teacher learned things from the inservice teachers because they are in your classroom watching how to teach and manage the classroom… so it is like no other relationship… they are the real teacher… the interns bring good ideas… it more like you are colleagues… It's just a different relationship [than student teaching].

A preservice teacher also effectively described the reciprocal mentoring that occurred in her partnership:

> My teacher and I were partners in this whole thing. Her knowledge of her classroom and her experiences with teaching paired with my knowledge of technology and how to use it in the classroom was a good combination. Two strong knowledge bases were integrated as we worked together towards a common goal … we shared ideas and kind of fed off each other. So the partnership worked really well. We both learned from each other.

In many cases, particularly in the faculty-graduate student relationships, reciprocal mentoring went beyond technology integration as one Fellow explains:

> I would definitely say we are colleagues. I mean, I go to him about questions about just other aspects of academia. I'm in the job search process, so I'll go to him and ask him questions about, "What should I do here?" So it's not just a work relationship as far as PT3 goes. There's other stuff. So it's definitely been a very good relationship.

The reciprocal mentoring that occurred during these partnerships is particularly important given the partnerships were built on traditionally hierarchical relationships (i.e. faculty member-graduate student and inservice teacher-preservice teacher) in which one partner is assumed the mentor and the other the mentee. We suspect the attention given to relationship building (see previous theme) contributed to successful reciprocal mentoring which in turn contributed to the effects on culture and context also discussed in the previous theme.

Increased professional activity was an important outcome of the partnerships and helped disseminate ideas to others.
All participants noted they experienced professional growth related to technology integration as a result of the partnerships. This fact alone is not necessarily noteworthy given the purpose of the partnerships, but the fact that many participants translated this growth into articles and presentations is deserving of attention. Nearly 10

publications and 20 presentations (with more planned in the coming academic year) resulted from the partnership work.

University faculty and graduate students are expected to participate in professional dissemination and all participants disseminated information about their technology integration efforts during the course of the partnerships. More importantly, they disseminated these efforts in journals and at conferences related to their discipline. This spread conversations about technology integration beyond educational technology journals and conferences. These professional experiences also contributed to the reciprocal mentoring discussed in the previous theme as faculty members helped doctoral students learn the ins and outs of scholarly writing and presenting.

Unlike university-based personnel, inservice and preservice teachers are often neither expected to nor supported to participate in professional dissemination. As a result of these partnerships inservice teachers presented at a statewide conference, preservice teachers presented at a regional conference, and a team of inservice and preservice teachers published an article about their technology integration work. Professional involvement is a key factor in empowering teachers to make changes in their classrooms (Dana & Silva, 2003) and our data suggests partnerships may be one avenue to encouraging such behavior.

Summary of Findings

Diverse partnerships related to technology integration facilitate effective uses of educational technologies within a "village" responsible for preparing prospective teachers by (1) enabling technology integration opportunities that would not be possible without the partnerships, (2) heightening awareness of and interest in technology integration within the culture and context of each partnership, (3) supporting a model of reciprocal mentoring in which partners learn from and provide knowledge or assistance to each other, and (4) increasing or initiating professional involvement and dissemination related to technology integration.

IMPLICATIONS FOR TEACHER EDUCATORS

These research findings led to two major implications for teacher educators regardless of context. The first implication is approaching the preparation of prospective teachers with diverse partnerships benefits not only the prospective teachers but also the members of diverse groups within the educational village. The second major implication for all teacher educators is providing resources, support, and time to allow all members of the partnership to develop trust, a common vision, and to grow professionally is critical in producing powerful partnerships. The following paragraphs will briefly elaborate on these implications.

Establishing Diverse Partnerships

Diversity in partnerships broadens and extends the vision of what education can be for preservice teachers. In our experience, preservice teachers now see technology modeled in daily teaching across the university community as well as having the opportunity to have strong technology-based field experiences in their preinternship and internship. Preservice teachers that participated in the technology-based field experiences also had the opportunity to practice using technology in the classroom with the support of inservice teachers. This practical application permitted students to combine the rhetoric of using technology in the classroom with the realities of teaching. In addition, preservice teachers can observe technology modeled in different content areas and within vastly different contexts. The diversity of these partnerships allowed preservice teachers to experience different ideas about integrating technology into a variety of academic areas and observe how these educators handled other classroom management issues associated with using technology in the classroom.

Resources, Support, and Time Contribute to Powerful Partnerships

By carefully attending to change models, we were able to create environments and willing participants ready to create powerful partnerships producing significant results. For example, the inservice teachers that participated in these partnerships grew in their use of integrating technology into the curriculum. Yet, these teachers also grew professionally in other ways. Many of the inservice teachers participated in a presentation at the state educational computing conference. For some of these teachers, this was their first opportunity to present at a conference. These teachers spoke of the confidence gained in their ability to use technology and how they were empowered as teacher educators.

Faculty and doctoral students at this university also grew professionally from these partnerships. Doctoral students noted how much they benefited from gaining new perspectives of what it means to be a faculty member at a research I institution. Many of the faculty and doctoral students presented at conferences and wrote journal articles about the partnerships. In addition, faculty learned new instructional strategies appropriate for their content and the context in which they teach. This professional growth benefited faculty and doctoral students.

By taking the time to negotiate common visions for the partnerships, allocating resources and time, and ensuring these partnerships take place over an extended period of time, the rhetoric of partnerships mesh with reality. In addition, by establishing mutual trust and respect, the intimacy of partnerships can take place. Most importantly for our context, there is a new perspective of the responsibility of preparing high-quality teachers to use educational technologies in their teaching by the village surrounding this teacher education program.

Additional Lessons Learned

Because of these successful partnerships, valuable lessons that do not directly relate to the research findings were learned and it would be irresponsible not to share these general lessons learned. Context is always a critical issue when establishing partnerships. Yet, there are five general lessons learned in the Teaching and Technology Initiative that can inform practice in other teacher education programs. These lessons are the importance of: developing mutual respect and trust in the partnership, balancing quality verses quantity, sustaining action and progress, providing win-win situations, and celebrating victories.

Developing mutual respect and trust in partnerships is essential before long-term, sustained progress can be made. Respect and trust also address power issues that can occur in partnership. Mechanisms must be in place to allow respect and trust to occur. It is not realistic to expect this to happen quickly; therefore, powerful partnerships take time to develop. This relates to the next lesson learned.

Sustaining action and progress in partnerships takes time. Each of the partnerships that took place in the UFTTI lasted a minimum of three years. This long-term commitment allowed stakeholders in the partnerships to negotiate roles, develop common visions, and then to implement action plans. Time indicates to all involved the true commitment of each stakeholder to the partnership.

A third lesson is to strive for quality over quantity. In the beginning of this initiative, we spread ourselves thin by having too many partnerships starting at once. This prohibited us from providing as much support, resources, and most importantly time in getting the partnerships established. We wanted to impact many schools with the UFTTI. However, we discovered it was more effective to work on systemic change at one or two schools. Although working in individual classrooms within various schools benefited the teacher and students in those classrooms, working with an entire school on the integration of technology helped change the culture of the school to one that expects technology to be a normal part of the teaching and learning process. Starting with a small number of partnerships and then gradually increasing those numbers was a much more effective strategy than beginning all partnerships at the same time.

Fourth, having partnerships that allow all stakeholders to be in a win-win situation is critical. By carefully relying on the frameworks provided by Ely (1976) in his *Conditions of Change*, we were able to help create environments that were open and ready for successful partnerships. Each participant in the partnerships could see how his or her efforts were respected, how he or she gained from the partnership, and how he or she were making a difference in the education of children in Florida.

Finally, the importance of celebrating victories in partnerships is important. Although each partnership celebrated milestones together, we found bringing all partnerships together on a yearly basis to celebrate the success of each partnership was positive for all participants and informative to the local educational community. The various partnerships learned from each other as presentations were made, shared solutions and concerns in small discussions, and then just celebrated with a huge celebration feast. This not only allowed participants in the partnerships to benefit but allowed others in the educational community to learn of these great accomplishments. Accomplishments from each partnership were also shared on the Teaching and Technology Initiative website (http://www.coe.ufl.edu/school/pt3).

CONCLUSION

The findings from the diverse partnerships in the University of Florida Teaching and Technology Initiative did facilitate effective uses of educational technology for preservice teachers. Our teacher education program was impacted in ways not possible without partnerships while respecting the context, culture, beliefs, and visions of the partnerships. These partnerships also strengthened connections between units that are sometimes at odds. Now, there is an atmosphere of trust and openness between the diverse partners. Finally, these diverse partnerships promoted professional growth among all partnership participants.

Partnerships to assist preservice and inservice teachers in using technology in teaching require great time, effort, and resources; yet, the results of effective partnerships produce preservice and inservice teachers who can use

technology in curricula and classrooms and have a broad perspective of how this can occur and benefits their students. The responsibility of preparing preservice teachers does not lie solely with teacher education programs; this "village" responsibility requires effective partnerships with other units in universities and colleges, public schools, business, and the community. We all have responsibility in preparing future educators and by learning from each other to ensure the rhetoric of partnerships becomes reality.

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