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The Creation of a Center for Technology in Education

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INTRODUCTION: UNDERSTANDING IMPACT

Institutions of higher education (IHE) have long been invested in the creation of centers for further study, application, evaluation, and research. Larwood and Gattiker (1999) argue that centers must be committed to making an impact on everyday public practice. Furthermore, these authors support that there are clear benefits to centers when there is a purpose that exceeds thinking and data collection and concentrates clearly on influencing practice for goal attainment.

Creating a center that is absent any attention to impact on public practice might feed research or development of new theory, however allowing observations in practice to develop questions for research leads to a range of opportunities for scholars and practitioners alike (O'Leary 2004). Hence, the center that utilizes practice and works to improve that practice is one that has more viable potential to achieve impact. Impact, as we define it, is simply the ability to innovate.

Innovation, the process of introducing a new way of doing things, is essential for the transition from theory to practice to occur. In essence, the ability of a center to share innovation and make the adoption of that innovation possible would eventually lead to meaningful impact. Hence the center that strives for innovation also holds in its mission impact.

One innovation that is seemingly limitless is technology. As Nickerson (1988) pointed out technology has the potential to not only influence but also transform our ways of thinking and performing. Technology has the capacity to change practice through its ability to provide a new means of completing a task, and specific to K-12 education technology has the opportunity to change some long-held beliefs about what it means to learn. With that in mind and a strong focus on impact, the Center for Technology in Education was recently created.

THE CENTER FOR TECHNOLOGY IN EDUCATION

As we have pointed out, there is considerable presence of centers in the United States. However, there is lack of research to support that this considerable presence equates to considerable quality. Therefore, when it was first considered that our IHE would engage in the development of a center, specifically the Center for Technology in Education (CTE), it was only sensible to focus that center first on quality, and second on impact. When the CTE was established its primary goal was one of outreach. That is, the CTE would focus on working in K-12 educational settings to engage in innovative uses of technology. In addition, the CTE would focus on research however, that research would come as a result of the CTE’s engagement with public practice and not hold researching in the K-12 environment as its sole endeavor. In short, the mission of the CTE is to promote innovation through teaching, research, policy, and outreach to K-12 schools through long-term partnership building.

Over the past eight years our institution, which serves over 4,000 teacher education majors campus wide, has engaged in dramatic, complex, yet sustainable teacher education reform. Major reform initiatives in the area of technology integration and fluency have included the implementation of a one-
to-one laptop program for preservice teacher, a university wide digital portfolio model, a technology mediated unit assessment system, and the creation of a digital learning system. With this level of technology innovation on campus and focused heavily on teacher education it is only natural that the local K-12 educational community begin to notice and be intrigued by the use of new technologies. Given that the distribution of our innovations in teacher education were dependent on faculty members who were (1) well versed in technology use in the K-12 environment and (2) had connections to the K-12 faculty and administration the CTE was created as a means to further support the needs of our local K-12 stakeholders. Again the CTE was reminded of its commitment to making an impact in the greater community.

The International Society for Technology in Education (ISTE) supports the belief that students must be technologically literate (NETS Project 2003). In an effort to clarify that support, a committee to articulate technology standards began their work in 1989 and four years later identified thirteen performance indicators (Roblyer 2003). Since that time, the National Educational Technology Standards for Teachers (NETS-T) and the National Educational Technology Standards for Students (NETS-S) have been created (http://cnets.iste.org/).

With efforts to integrate national technology standards for both teachers and students there is great attention to partnerships providing a significant role for the CTE in the innovation of technology in the K-12 environment. Again, we can observe the benefit to using innovation to achieve goals and impact practice being at the forefront of the mission for the CTE.

UNLEASHING THE CTE

Bandura (1986) supported that innovation led by established networks and a purpose that leads to the betterment of one’s organization leads to adoptive behavior conducive to positive change or impact. Knowing this has in part led to the success of the CTE. During the first year of operation the CTE hired a director who immediately, with the assistance of the dean of the Teachers College and the chairperson of the Department in which the CTE resides, appointed an advisory board to ensure that the CTE would stay true to its mission of outreach and support to K-12 schools.

The first action of the director was to review the use of technology in area schools while simultaneously constructing organic relationships with the teachers and administrators in these schools. Working with the strong professional development schools (PDS) Network already in place at our institution the director was able to assess the needs of the geographic area and develop an action plan. Not surprisingly the use and level of technology integration varies widely based on location and demographics. This difference has been acknowledged as a meaningful component of the State’s technology goals (http://www.doe.state.in.us/olr/techplan/strategicplan.html).

Attention to technology at the state level via its goals and objectives provided a natural entry point for the director and the CTE. Participating in meetings and other statewide events nurtured dialogue and provided a foundation for exploring common goals. Overall, these initial meetings led to partnership building thus positioning the CTE as an active entity in shaping technology use in Indiana schools. Paying attention to the goals of the state and the already established network of innovators the CTE began its work in area schools.

Simultaneous to the outreach and statewide physical presence of the CTE, a web presence
was also created to facilitate collaboration, communication, and provide support for all stakeholders. Here visitors can access an events calendar, current projects, grant opportunities, names and email addresses of the CTE director and advisory board, and an online support system. This web suite is dynamic, changing frequently in order to better serve our online community. The technology prowess of the director, staff, and advisory board of the CTE allowed for the use of technology to shape and sustain its mission.

After a series of efforts were facilitated, multi-pronged approach to outreach was instigated. This approach supported the formation of partnerships, long-term professional development opportunities, the implementation of student centered learning environments, and funding opportunities. Reflecting on this critical point of movement for the CTE, it is important to note that attending to each of these approaches simultaneously rather than addressing them individually led to success.

Partnerships

As we mentioned previously, initial partnerships with schools were made via the well-established PDS Network. While these initial partnerships were exciting and successful we believed it was necessary to expand our outreach to include schools not directly participating as a PDS or partner school. In addition, we were hoping to increase our successes so that we could achieve broader exposure and greater dissemination. This led to the formation of the Leaders for Innovation Series in which 30 Indiana Principals (10 elementary, 10 middle, and 10 high school) were selected to share their ideas, concerns, and visions for increased technology integration in schools. Each of the principals and their schools would then serve as models for excellence in technology integration for other schools in the state and beyond. Building from research on the barriers to technology integration in schools this Series addressed multiple issues with these model schools in part to demonstrate success and in part to understand the challenges each school uniquely faces.

Because funding technology needs is often a barrier to successful use and integration the first meeting of the Series was related to a needs brainstorming session. Collaborating with the campus unit that supports grants, sponsored programs, and research as well as a selected group of graduate students enrolled in a grant-writing course, the CTE paired principals, graduate students, and grants to provide authentic experiences for graduate students and grant writing assistance for schools. This unique approach provided an opportunity for the CTE to exemplify its mission where schools, technology, learning, understanding, and growth are joined with a goal of innovation. We feel hopeful that our model of cross-collaboration will continue to grow to include other schools in the state, other departments on our College and additional programs within our own University. In the next phases of planning and development we will seek out opportunities where multiple stakeholders can benefit from shared experience.

Opportunities for Teachers

A critical stakeholder in any innovation for K-12 education is of course the classroom teacher. In their 2003 nationwide survey of demographically diverse schools Norris, Sullivan, Poirot, & Solloway, found that despite the mass amounts of money that has been spent on technology in K-12 schools 14% of K-12 teachers do not use technology for instructional purposes and less than half (45%) of K-12 teachers use technology for less than 15 minutes each week. Only 18% of teachers surveyed use computers for instructional purposes more than 45 minutes each week. Internet use lags even further behind with
1.4% of the respondents using the Internet for instructional purposes, more than a quarter do not use the Internet at all, while two-thirds of the teachers surveyed use the Internet for less than 15 minutes each week. This disturbing statistic is compounded by the fact that professional development often occurs as a one shot approach taking place in a classroom during lunch or after school usually involving skills training rather than mentoring these teachers to encourage a change in practice and pedagogy.

The CTE has attempted to reverse these problems via ongoing professional development opportunities for teachers that focus on context, teacher input, student mentoring, just in time support via video conferencing and instant messaging, and extensive web-based resources. For example, when the teachers learned that in addition to the implementation of a one-to-one laptop initiative in their school a digital portfolio project was to begin they expressed concern about the pressures they were facing. Listening to the frustrations of the teachers the CTE team slowed the process and enlisted the teachers to help redesign the initiative. This communicative teacher-centered approach provided teachers the opportunity to design their instruction around the initiatives. By stepping back and focusing on making the experience of technology integration matter in the lives of teachers buy-in of both the one to one laptop initiative and the portfolio project increased. While reinitiating the planning process took additional time and it is taking longer to achieve our goals providing teachers a voice in the process has contributed to their buy-in and project sustainability.

While renegotiating created one means for improved professional development, the CTE also negotiated the identification of local experts located on individual school campuses to mentor colleagues. Through this model teachers are sharing their experiences over lunch, in team meetings, via the CTE Website, and at local conferences. Because teachers that participate in CTE projects and professional development often begin to more actively pursue reform and seek out opportunities for innovating teaching, these experienced teachers are now participating as master teachers in new CTE sponsored projects.

Opportunities for Students

As we began to learn about the nature of technology in our local K-12 schools and build those relationships that opened doors for innovation and collaboration, it became obvious that while administrative challenges were one realm of technology innovation in schools there was a building attention to the use of technology for learning and improved student achievement. At a state level this focus continues to be on technology for math and science addressing this goal we worked with the teachers in a local middle school to enhance the curriculum currently in use by infusing a simulation based digital learning environment. The impetus to this type of integration was to create a learning environment that engages learners while encouraging teachers to shift from a teacher directed to student centered teaching style.

The infusion of this timely digital learning environment into the educational lives of students and teachers brought attention to how students can improve learning and experience environments that they might not otherwise be privy to. Once again, the CTE’s attention to the larger picture, not just new “cool” technology tools, but meaningful and purposeful technology integration has provided a framework for continued collaboration that will more than likely lead to a greater attention to technology as a means to improve achievement.

LESSONS LEARNED
The first 24 months of the CTE’s existence have provided many lessons and opportunities. The development of an infrastructure is essential for the initial and continued success of any center. In many of the school partners there are more than one initiative happening simultaneously and the teachers feel understandably stressed. One key to the CTE’s success was flexibility and adaptability. Approaching professional development with a willingness to adapt to the needs and goals of the environment was crucial to gaining the trust of the teachers, and gaining trust was crucial to our success.

After the first year the advisory board was expanded to include members from outside the Teachers College to widen the mission and exposure of the CTE. These new members bring a new perspective to the CTE helping us redefine our mission and goals and expand opportunities to others outside of Teachers College. Funding continues to be a challenge, however, having success stories to point to like the ones we have discussed help us overcome this challenge.

CONCLUSION

The CTE has already exceeded original expectations. In addition, to an active role in the emergence of instructional technologies in local area schools the CTE has begun to make an impact at the state level. We are engaged in reform efforts designed to impact teachers and students over an extended period of time. Crucial to our success is the understanding of all stakeholders that substantial change in school practice typically takes four to seven years. Our goal is to help administrators understand the change process and help teachers (both inservice and preservice) embrace life-long learning and look forward to participating in professional development throughout their careers. Working in support of a meaningful use of technology for teaching and learning, the CTE continues to build relationships by being mindful of current literature on change while creating new approaches to purposeful integration.

REFERENCES


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