CHAPTER 1

Pathways for Change
Facilitating Faculty Empowerment

This chapter describes the journey we took through a maze of change in teacher education at a large college of education. Significantly restructuring our PT³ grant project in its final year to better facilitate its objectives, the project leadership implemented four initiatives: a Technology Faculty Team, a Curriculum Grants Program, an Assessment of Technology Competencies, and a Teacher Education Portfolio Committee. By giving voice to faculty, thereby empowering them, these initiatives created a solid pathway for the change process.
Introduction

The difficulty of equipping undergraduate teacher education candidates to effectively model and integrate computer technologies in PK–12 classrooms is compounded when a state university has several large teacher education programs. Attempting to promote any type of change in an institution that every year graduates more than 700 teacher education majors is difficult enough; adding a computer technology emphasis creates a daunting project indeed. This chapter describes such a journey and tells the story of how we worked together to negotiate the myriad issues present in Bowling Green State University’s College of Education and Human Development.

By working to support the development of faculty voices, thus empowering our faculty, we created a pathway for the process of change to move forward.

The Context

Bowling Green State University (BGSU) is a Doctoral I university located in northwest Ohio. Student enrollment each year is approximately 20,000. The university is highly committed to student and faculty integration of computer technologies, as indicated by the continued maintenance and expansion of its technology infrastructure. High-speed, high-volume Internet; electronic classrooms; 20 computer labs; and a specially designed technology tutoring lab called StudentTech evidence the growing media-rich environment. This type of university interest and support in computer technology served as a helpful backdrop for our PT3 grant, titled Project PICT (Preservice Infusion of Computer Technology), and its emphasis on technology integration in the College of Education and Human Development.

The college serves 4,500 undergraduate students, and 3,200 of these are teacher education majors. The four teacher education programs (early childhood, middle childhood, adolescent-young adult, and special education) graduate more than 700 students a year. Because of this, BGSU is the largest producer of teacher education graduates in Ohio. One hundred twenty-five full-time faculty, as well as many adjunct instructors, maintain these very large programs.

During the period of our grant, an extensive restructuring of teacher preparation was taking place in Ohio. These changes included a shift from a more traditional teacher education to one that increased rigor by establishing high content and pedagogy expectations, to be documented by performance and test data at key points in the programs. These programmatic changes necessitated the development of new courses that focused on instruction that was developmentally appropriate, was integrated across subject areas, and actively engaged learners.

Within this context, Project PICT, funded through capacity-building and implementation grants, focused the majority of its efforts on training teacher education instructional and clinical faculty. By increasing access to technology and providing faculty with an extensive training program that included mentoring and teaming with K–12 teachers, technology skills and classroom use of technology significantly increased each year.
However, it became clear that PICT’s impact, though statistically significant, was not reaching its primary goal: systemic integration of technology within each of the four teacher education programs. In fact, technology skills and use were increasing for only a few faculty members in each program. In addition, the few faculty members who were attempting to integrate technology into their courses said they were having difficulty getting students to use technology to complete assignments due to the extreme range of technology skills among students.

Yet another complicating factor was that technology use in the courses was still inconsistent and lacked alignment with the National Educational Technology Standards for Teachers (NETS•T) (ISTE, 2002). Since NETS•T provides a clear delineation of educational technology goals for teachers, we had orchestrated much of our programming and training around these standards. The preparation performance profiles defined within NETS•T lay out clear targets for each level of preparation, which seemed to clarify our vision of how the standards could be integrated throughout each program. Although some standards were being addressed in teacher preparation courses, the teacher education programs’ curriculum did not reflect consistent, systemic adoption of NETS•T.

Approaching the final year of the grant, the PICT leadership—composed of five faculty members drawn from educational foundations, educational technology, middle childhood, and special education—was committed to restructuring the fourth and last year of the project to provide more support and direction to the teacher education faculty and programs. This program restructuring resulted in four main paths toward change: a Technology Faculty Team, a Curriculum Grants Program, an Assessment of Technology Competencies, and a Teacher Education Portfolio Committee.

Empowering Faculty

**Technology Faculty Team**

While our work in the K–12 arena was certainly increasing technology skills and use among our clinical faculty (approximately 30 K–12 cooperating teachers were participating each year), the number of clinical faculty being impacted by our project was relatively small in light of the 885 student teachers placed each year from our college. It became clear that faculty needed to become actively involved in the PICT project—not just recipients of training and equipment—to become central to the process of changing the teacher education programs.

The primary revision was the development of a Technology Faculty Team to address the differing agendas, needs, and schedules of PICT faculty. The team was organized by two faculty members whose integration of technology into their courses during the first implementation year resulted in their becoming very involved. Calls went out to faculty across the various programs, and invitations were given to join the new group. Twenty-five faculty members ultimately became involved in some aspect of the team’s efforts.

This team provided more convenient and structured support to faculty from all four teacher education programs and educational foundations. This included assessment, educational psy-
As faculty involved in the College of Education and Human Development at the beginning of Project PICT, we struggled to meet the goals of technology integration. While we experienced some success in our own classrooms, what we found lacking was the chance to talk to peers about what was happening in theirs. How were they dealing with students who resisted new requirements to integrate technology into their lesson and unit planning? How were they handling the struggle to learn specific technology skills while infusing students in their classrooms with those same skills?

Questions such as these became the starting point for discussion by a new faculty team called Technology Faculty Team. Over pizza, faculty talked about our personal struggles to teach in ways that we knew came closer to meeting the NETS•T standards. For example, on a personal-needs basis, when the project hired and trained a set of technology mentors (graduate students) who were assigned to work with faculty, there were questions about how to work with student mentors when they knew more than we did about many aspects of technology use.

So we worked to be comfortable and public about what we did not know. Technology Faculty Team meetings helped us understand (we were junior faculty at the time) that others were in similar situations. What we had was pedagogical content knowledge. The graduate student mentors became a way to help overcome our technology limitations while not being a professional threat. Our faculty team spent time talking about the issues involved. Word got out about our conversations, and the group grew to include faculty not involved in Project PICT.

Change comes when people feel supported in the early first steps of going down new paths. Change needs community first. Not everything worked for the faculty during those first few years of PICT. Not everything works now. However, by strengthening our ability to advocate for change while building a vocabulary steeped in the standards set out by ISTE, we were able to encourage pioneers willing to try new roads and come back to tell others how their journey went.

As the Technology Faculty Team worked together, the meetings proved important in many ways. Members of the team became change agents in their respective teacher education programs as leaders of the curriculum grants. Our first struggles and discussions in those faculty team meetings provided support and direction for this journey.
technology, and educational philosophy. The faculty team met monthly, sharing ideas and identifying difficulties in their struggles with infusing technology into their education courses. One difficulty faculty struggled with was learning a technology skill while simultaneously infusing that skill into their curriculum. Yet the struggle to infuse the skill not only increased their understanding of the technology, but also modeled effective risk taking for the teacher candidates. Often the instructor and teacher candidates would learn the skill together, creating an open, constructive learning environment.

Although the codirectors of the Technology Faculty Team facilitated team meetings, agendas were developed by the entire team and focused on arising needs. Typical needs included such issues as access to labs, tech support, struggles with the range of student skills, and analysis of the pedagogical implications of the changes happening in classrooms as a result of the infusion of technology. These meetings became not only a forum in which to gather and share information, but the nucleus of needed change as well. By giving key technology information to faculty in the individual programs, we could see diffusion taking place as they discussed their technology needs and expectations.

Team membership mushroomed quickly, since additional faculty attended for a chance to talk about significant issues related to the ongoing discussions of technology access, technology skills, the pedagogy of technology infusion, and systemic issues within programs. These meetings became a space in which to safely share our struggles and discuss our teaching with peers.

With each Technology Faculty Team meeting, PICT leadership developed a better understanding of the challenges that each program and faculty member faced when attempting to integrate technology, not just into the classroom, but throughout the entire teacher education programs. By the end of the first semester of team meetings, the leadership was committed to restructuring the final year of the project to provide more support related to training, equipment, and opportunities for dialogue. By first working to strengthen the technology skills of pioneering faculty members and change agents, PICT gave these faculty the opportunity to provide direction to other teacher education faculty and their teacher education programs.

**Curriculum Grants Program**

The PICT Curriculum Grants Program served as the main catalyst for faculty development and curriculum restructuring. These grants were offered to foundation courses and to the teacher education programs to develop NETS•T-based components for all course syllabi. Faculty teams from teacher education programs and specific core courses were awarded grants (from $5,000 to $15,000) to

1. integrate NETS•T systemically throughout the program;
2. revise courses to infuse technology and related standards;
3. develop instructional activities that reinforce technology skills and standards; and
4. develop assessments of technology standards.
A formal grant competition was established that included the dissemination of proposal guidelines, a review timeline, and an evaluation process.

Funding teams of education faculty from the four teacher education programs and four core courses (Educational Psychology, Educational Technology, Education in a Pluralistic Society, and Assessment in Education) resulted in more than 50 faculty participants. The average team consisted of four to six faculty members from the same program area. The team leader for each group was instrumental in recruiting additional members and maintaining the focus of the team throughout the year.

PICT’s director had actively sought out team leaders for a couple of the programs and offered assistance in writing the grant proposal. In addition to funding, grant proposals could request two to four laptops, as well as assistance in faculty training and support. To meet participants’ increased demands for technological, instructional, and clerical support, additional graduate assistants were hired to provide each PICT grantee with assistance for 5 to 10 hours per week.

Since each grant proposal outlined a unique plan for faculty training, curriculum development, and assessment, PICT provided training on a variety of topics tailored to the needs of the requesting grant team. Faculty teams from the core courses were encouraged early on in the year to identify the preparation performance profiles (PPPs) (ISTE, 2002) that would be addressed in the respective courses. PPPs, identified in NETS•T, describe specific learning objectives for teacher candidates at the various levels of preparation: general, professional, student teaching, and first year. A matrix of the professional PPPs and the core courses was generated and shared with the programs so that faculty participants could then analyze for gaps and restructure course curriculum within each of the levels of preparation (see Table 1).

TABLE 1
Preparation Performance Profiles—Professional Level
Example of courses aligned with professional preparation performance profiles 1–3

<table>
<thead>
<tr>
<th>Description</th>
<th>Standards Addressed</th>
<th>Introduced</th>
<th>Taught</th>
<th>Reinforced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify the benefits of technology to maximize student learning and facilitate higher order thinking skills.</td>
<td>I, III</td>
<td>†</td>
<td>EDFI 302/303</td>
<td>EDFI 402</td>
</tr>
<tr>
<td>Differentiate between appropriate and inappropriate uses of technology for teaching and learning while using electronic resources to design and implement learning activities.</td>
<td>II, III, V, VI</td>
<td>†</td>
<td>EDFI 302/303</td>
<td>EDFI 408</td>
</tr>
<tr>
<td>Identify technology resources available in schools and analyze how accessibility to those resources affects planning for instruction.</td>
<td>I, II</td>
<td>EDFI 402</td>
<td>EDTL 302/367</td>
<td>EDFI 408</td>
</tr>
</tbody>
</table>
The curriculum grant model enabled our large teacher education programs to begin to purposefully infuse technology standards into all levels of student coursework. The conversations among faculty, centering around NETS•T, engaged a good portion of them, because we sensed a common vision. We realized that we so rarely conversed about our teaching and our aspirations for our students.

Dividing up the PPPs for the professional level and working together to design technology-rich lessons and activities instilled a sense of commitment, excitement, and collegiality. Matrices that displayed the required courses in a degree program and NETS•T that were addressed in these courses graphically emphasized the commitment to model technology integration throughout each program. Master syllabi were amended to reflect this commitment, and program leaders emphasized that these modifications were to be included in all sections of the revised courses.

Savilla Banister, Assistant Professor
Codirector of Project PICT

As the coordinator of the undergraduate courses in classroom technology, I met regularly with the instructors of the computer course for the teacher education majors. At a recent meeting of my educational technology staff, instructors noted that their spring semester students were demonstrating more computer skills than in past semesters. Some of the technology-rich lessons that had been developed by faculty through the Curriculum Grants Program included the

1. creation of Web pages for a class in international perspectives;
2. development of a digital video project in their teaching methods course;
3. use of a digital still camera and presentation software for a class in communities and families;
4. design of sample early childhood projects in Kid Pix;
5. critique of online video tutorials in their educational psychology course; and
6. composition of a paper on the “digital divide” for a contemporary issues class.

After reviewing many of the lessons, we realized what an impact the entire faculty was making as they addressed various components of NETS•T across the required courses. We, as a technology staff, now can move forward in our coursework to focus more on both lesson planning for technology integration and additional computer skills, confident that our teacher education faculty members are modeling effective technology integration strategies.
This was a huge commitment, and, of course, some were skeptical. However, the resources PICT provided helped ease faculty anxieties by assuring that equipment, training, and technical support were available. In addition, the support of the college’s top administration communicated to faculty that technology integration was not just a fad but an ongoing commitment. Ultimately, the enthusiasm and commitment of team leaders and PICT participants influenced other faculty members to adopt course revisions.

The program restructuring that resulted from the curriculum grant work has truly changed our students’ experiences with technology. Our thousands of teacher candidates are no longer encountering technology standards in only their 3-hour computer course. Instead, teacher candidates are challenged to demonstrate technological prowess throughout their coursework. Our faculty, as a whole, has enthusiastically embraced the concept of curricular technology integration. We are, together, in addressing technology standards for teachers, structuring courses that complement and support each other.

In turn, computer courses for the various programs are changing to reflect the expansion of technology integration experiences throughout our college.

**Assessment of Technology Competencies**

In response to faculty concerns related to the wide range of technology skills among their students, a final initiative was a pilot of Assessment of Technology Competencies (ATC). The pilot involved 125 students enrolled in Introduction to Education. The implementation of this assessment for entering education students would

- ensure that students possessed the skills necessary to complete technology-related assignments in their education courses;
- facilitate more advanced levels of technology integration across teacher education programs;
- allow the educational technology courses to focus more on pedagogy of instruction and technology use; and
- facilitate the development of a teacher skilled in using technology as an effective instructional tool.

The assessment is performance-based in that students create four technology-based products: a Word document, an Excel spreadsheet, a PowerPoint presentation, and a graphic illustration. A full pilot of ATC was implemented with approximately 1,100 students. ATC may be accessed at edhd.bgsu/atc/info. In addition, for a full description of Assessment of Technology Competencies, see Banister and Vannatta (in press).

**Teacher Education Portfolio Committee**

Out of the Technology Faculty Team meetings grew a strong interest in, and commitment to, implementing electronic portfolios for both student showcase and assessment purposes. Several teacher education faculty were already dabbling in student development of electronic port-
Assessment of Technology Competencies: 
A Personal Perspective

Cindy Ross
Project PICT Coordinator

Prior to my work as the instructional technology coordinator for the college, I served as Project PICT coordinator and was one of the developers of the ATC. In my new position, I am responsible for the development and implementation of the ATC test. The test is given to all freshmen enrolled in the Introduction to Education course. Students are given a packet during summer orientation that includes instructions for the test, a practice test, and instructions for online tutorial videos. Students are required to complete the test as an assignment in the course. They may retake any portion of the test that they fail.

The administration of more than 500 tests each semester is challenging. The challenges include the scheduling of lab time, communicating with students, helping students prepare for the test, and assessing the test. Even with the many challenges, I have discovered numerous benefits to the ATC, including the following:

- Many students who were lacking basic skills in technology have recognized that they are capable of learning additional skills on their own by accessing help through various campus services, workshops, and online tutorials, and by simply asking others for help. The ATC practice test gives students guidance on how to recognize their strengths and weaknesses and seek help from these resources.
- Students acknowledge that strengthening their skills provides them with important technology tools for future courses.
- Students who do possess the technology skills required to complete the ATC have learned the importance the College of Education has placed on the use of technology for future courses.
- The implementation of the ATC necessitates revisions of the required technology course for all teacher education candidates. Specific changes include a stronger emphasis on technology integration and an increase in the instructional use of higher level technology skills, such as digital video.
- Teacher Education courses have also changed because of the implementation of the ATC. Faculty now feel more confident that students possess the necessary skills to accomplish technology tasks, or to seek help.

folios, typically produced during methods courses and student teaching. However, as faculty began to analyze the curriculum and explore areas for technology integration, most agreed that the electronic portfolio could serve as a powerful tool for assessment of teaching development and technology standards. Faculty felt that a collaborative and centralized approach was necessary to address the overall assessment needs in the college, as well as the unique assessment needs of each program.
As a result, the Teacher Education Portfolio Committee was created to develop portfolio guidelines throughout the teacher education programs. The committee determined that the primary purpose of the electronic portfolio for BGSU teacher education was to conduct

1. an on-going student assessment of achievement of teacher education standards; and
2. a program evaluation whereby data would be generated from the student electronic portfolios and then aggregated and analyzed by program for program review and improvement.

It was determined that an e-portfolio system for BGSU teacher education would need to work with existing Web-based systems at the university so that students could use existing passwords.
and have easy, but secure, entry. A basic template for the BGSU teacher education electronic portfolio has been developed. This template identifies more than 20 key assessments that are aligned with the Ohio Teacher Performance Standards and cut across all teacher education programs. A database is being developed to maintain student assessment data and facilitate ongoing review of student progress. Since we are still in the early stages of implementation, many details, such as tracking and management, are still being determined.

Impact and Sustainability

Project PICT provided a foundation for the integration of technology throughout the College of Education. The Technology Faculty Team and the Curriculum Grants Program laid a pathway to the creation of Assessment of Technology Competencies and the Teacher Education Portfolio Committee. Because these initiatives facilitated the teaming of faculty within programs and the college, faculty took ownership of the change process and articulated a united faculty voice, both of which continue to serve as building blocks for sustained technology infusion. The impact of Project PICT may be seen in the following indicators:

- Over the 4-year period, faculty technology skills significantly increased for overall instructor classroom technology use, overall student classroom technology use, and faculty administrative technology use. Faculty also reported significant gains in their knowledge and understanding of pedagogy related to technology integration, for example, knowledge of NETS•T and NETS•S, instructional methods for integration of technology into the classroom.

- Faculty interest and motivation to learn and try more technology in the office, in the classroom, and in student assignments was facilitated through the Faculty Technology Team. This team provided an opportunity for individual faculty members to become a strong voice for change and restructuring within the college. While the Technology Faculty Team no longer formally exists, the conversations and collaborative endeavors related to NETS•T continue. Encouraging words, new ideas, and additional insights are a part of daily conversations.

- Curriculum and assessments of teacher education programs and core courses are aligned with NETS•T as a result of the PICT Curriculum Grants Program. This alignment ensures that each teacher candidate will progress through the teacher education programs with the appropriate level of technology competency and experiences.

- A new faculty position titled instructional technology coordinator was created in the college to provide ongoing support for faculty continuing the work of curriculum revision to integrate NETS•T.

- Faculty are systematically integrating technology into their courses as a result of the PICT Curriculum Grants Program. Teacher candidates see their instructors modeling technology integration strategies in numerous ways.

- Assessment of Technology Competencies was developed to address the wide range of technology skills among students and provide a stepping-stone for student success in the use of
technology in future courses. The required technology course can now focus on the integration of technology and less on skill development.

- The Teacher Education Assessment Committee (formerly called the Teacher Education Portfolio Committee) was created out of the increased dedication of faculty to electronic portfolio development. This task force is continuing to explore electronic portfolio options, communicating candidly with the dean of the college concerning issues and needs. Faculty members are guiding students in the identification and collection of e-portfolio artifacts that demonstrate teacher candidate achievement of state and national standards.

Outcomes and Recommendations

Our story is one of gradual, but sustainable and meaningful, change. We have moved from offering teacher candidates small, disjointed experiences in educational technology to providing them with systematic opportunities to develop NETS•T competencies. From a small number of faculty, as well as teacher candidates, this effort grew to include every teacher education program, paving roads that are still being traveled, even as the PT³ funding has ended. Keys to this accomplishment were the Technology Faculty Team, the Curriculum Grants Program, the Assessment of Technology Competencies, and the Teacher Education Assessment Committee.

Although PT³ was certainly instrumental in facilitating our project, we offer several recommendations to teacher education programs seeking to integrate technology in a climate with little technology-related funding for teacher education.

Solicit support from top administration officials regarding

- the importance of technology in teacher education preparation;
- the key role technology plays in developing an effective assessment system for student and program evaluation and, ultimately, the accreditation process;
- possible reallocation of funds and equipment to facilitate faculty training, innovation, and curriculum development.

In addition:

- Create a forum in which faculty can communicate and collaborate on a regular basis regarding technology integration and curriculum.
- Identify key points for assessing technology-related competencies throughout teacher preparation and determine how the curriculum can support and implement those assessments.

While the change process is often approached through a linear route, our story is one of multiple paths, each being navigated using a varied pace. The formative evaluation process that we engaged in throughout the years of our PT³ funding enabled us to pave the way for sustainable change. Renewed attention to supporting faculty teams, a stronger focus on faculty
understanding of NETS-T, and a commitment to curriculum modification propelled the project in critical ways.

Our sensitivity to faculty concerns allowed us to acknowledge and respond to their interests and needs. These responses supported the forging of new pathways toward our ultimate destination: the preparation of a technology-savvy classroom teacher.

References
