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ABSTRACT

With the current influx of grants and national technology standards, many in Instructional Technology departments that serve teacher education programs wrestle with working outside initial certification areas. At Georgia State University, the Instructional Technology unit has been working closely with the Middle Childhood Education unit for the past three years to develop a cooperative relationship. Working together, the units have re-designed the stand-alone technology course into an innovative, alternative approach to technology in teacher education in which introductory teaching methods are taught in a technology-rich learning environment. In addition, a multi-submission portfolio assessment plan for all Middle Childhood Education students was instituted to ensure that all students meet multiple national standards prior to graduation. This paper explores the process and the outcomes of this partnership. Current and future plans for the partnership are provided. In addition, the authors provide their personal perceptions of why this partnership worked, and why it continues to grow. Finally, recommendations for establishing partnerships between instructional technology units and initial certification units are provided. (Contains 30 references.) (AEF)

Establishing Partnerships Between Instructional Technology and Teacher Education Departments: A Case Study

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Abstract

With the current influx of grants and national technology standards, many in Instructional Technology departments that serve teacher education programs wrestle once again with working outside initial certification areas. How can Instructional Technology departments work with teacher education faculty and programs to ensure that novice teachers will be able to meet new standards? Relationships of an increasing cooperative nature are called for. This paper describes a case of IT and teacher education unit cooperation and its results.

Introduction

With the current influx of Preparing Tomorrow's Teachers To Use Technology grants, many in Instructional Technology departments who serve teacher education programs wrestle once again with working outside the initial certification areas. In light of increasing standards and accountability in teacher education programs, not only in technology but also in all content areas, how can Instructional Technology departments work with teacher education faculty and programs to ensure that novice teachers will be able to meet these standards? The technology standards are high and require significant attention in order for new teachers to meet these standards, probably more attention than most teacher education faculty are capable of giving. Experts argue the need for a stand-alone technology course as part of the preservice curriculum to adequately prepare new teachers for new roles versus the modeling of technology integration across the preservice program. While a stand-alone technology course should provide preservice teachers with adequate skills to meet technology standards, university and college administrations are reducing program credit hour requirements to assist students in graduating in a timely manner. Few programs can still afford the credit hours to devote to a stand-alone technology course. Whatever the solution, instructional technology departments are often housed outside of initial certification departments, and face challenges to influence initial certification program curriculum. Relationships of an increasing cooperative nature are called for.

At Georgia State University, the Instructional Technology unit has been working closely with the Middle Childhood Education unit for the past three years to develop just such a cooperative relationship. Working together, the units have re-designed the stand-alone technology course into an innovative, alternative approach to technology in teacher education in which introductory teaching methods are taught in a technology–rich learning environment. In addition, a multi-submission portfolio assessment plan for all Middle Childhood Education students was instituted to ensure that all students meet multiple national standards prior to graduation.

This paper explores the process and the outcomes of this partnership. Current and future plans for the partnership are provided. In addition, the authors provide their personal perceptions why this partnership worked, and continues to grow. Finally, recommendations for establishing partnerships between IT units and initial certification units are provided.

Instructional Technology and Teacher Education

Computer technology has been available for use in educational settings for several decades. According to a survey of state technology officials (Trotter, 1999), 42 states require teacher preparation programs to include technology. One might think that by this time colleges of education (COEs) are successfully preparing teachers to integrate technology into instructional practices. However, this has not necessarily been the case. In 1995, the Office of Technology Assessment (OTA) published a report on the state of teachers and technology. According to the OTA, teachers were not and did not feel adequately prepared to integrate technology into their teaching practices. One of the contributing factors cited was the lack of technology training available in teacher preparation programs at colleges of education (COE). When technology instruction was provided, it involved teaching *about* technology not teaching *with* technology. In most instances, COE faculty did not model technology integration with their preservice students. Willis and Mehlinger (1996) conducted a literature review on technology and teacher education. Their findings concurred with the OTA report:

> Most preservice teachers know very little about effective use of technology in education and leaders believe there is a pressing need to increase substantially the amount and quality of instruction teachers receive about technology. The idea may be expressed aggressively, assertively, or in more subtle forms, but the virtually universal conclusion is that teacher education, particularly preservice, is not preparing educators to work in a technology-enriched classroom (p. 978).

According to a recent survey of 416 teacher preparation institutions commissioned by the Milken Exchange of Education Technology, most faculty members did not model the use of instructional technology skills in their teaching (Moursund & Bielefeldt, 1999). In several studies it appears that faculty who are not modeling are also not requiring students to use technology in their lessons or assignments (Lewallen, 1998; U.S. Congress, 1995; Wetzel, 1993).

In a nationwide survey of education majors and faculty, Fulton (1989) found that while 58 percent of the faculty thought that graduates certified in secondary education were well prepared to use technology, only 29 percent of the students felt they were. However, a report produced by the U.S. Department of Education (2000) revealed refreshing news: less experienced teachers were more likely than experienced colleagues to indicate that college course work prepared them to use computers in their classrooms. "84 percent of teachers with 3 or fewer years and 76 percent of teachers with 4 to 9 years of teaching experience reported that college/graduate work prepared them to use these technologies to any extent, compared with 44 percent of teachers with 10 to 19 years and 31 percent of teachers with 20 or more years of teaching experience" (p. 78). While teacher education programs still face obstacles as they prepare preservice teachers, it is evident they are making in-roads.

Models of IT Instruction in Teacher Education Programs

These in-roads are being made via stand-alone computer courses as well as through integrated coverage across teacher education curriculum. Early efforts to infuse technology into teacher education often resulted in a stand-alone course that focused primarily on technology literacy skills. Many of the strategies used were based on a behavioral model in which students focused on learning a prescribed set of skills and were assessed through objective computerized assessments. It was not uncommon for these courses to be taught by technology faculty with little input from education faculty (Willis & Mehlinger, 1996). In this model, teaching and technology are separated. Therefore preservice teachers are not able to integrate technology into their teaching practices.

This model is still used in many COEs. Leh (1999) conducted a study on the content of technology courses offered to education majors at 25 colleges and universities. The study revealed that while all of the courses focused on concepts and skills, only 52 percent taught about curriculum integration. Results of study by Bennett and Daniel (1999) on novice teachers who experienced a stand-alone course indicated that having only a single course in computer technology was not sufficient. It did not adequately prepare teachers to apply technology in the classroom.

A second model of instructional technology instruction in teacher education programs is one in which all teacher education faculty model technology integration across all courses. While ideal in concept, it is arguable that many teacher education faculty still lack sufficient technology skills and access to successfully practice cross-program modeling of technology integration.

In response, some COEs have re-invented the stand-alone course to make it more constructivist in nature with a greater focus on technology integration. Effective teacher education programs combine this course with technology integration in the teacher education courses. In a follow-up study to the OTA report, Wetzel and Strudler (1999) looked at four colleges deemed exemplary in their approaches to prepare inservice teachers to use technology. The study indicated that each of these programs had a required educational technology class for preservice teachers to take early in their program. In addition, each institution was part of a larger plan for preparing students to teach with technology. The Milken Exchange on Education Technology report (1999) calls for increased use of technology in curriculum courses. It too indicated that a single course in instructional technology does not provide adequate training for preservice teachers. This third model, the integrated approach along with a required technology for teachers course, may be the best approach, particularly in light of the renewed focus on accountability in teacher education.

Accountability in Teacher Preparation

There is a national movement towards accountability in teacher preparation programs. New technology standards for teachers along with revised accreditation requirements will require teacher preparation programs to

more closely examine the ability of their new teacher candidates to teach with technology. Recently published National Education Technology Standards for Teachers (NETS-T) (International Society for Technology in Education, 2000) reflect this movement. Along with the standards, the International Society for Technology in Education (ISTE) has created "professional preparation performance profiles." These profiles provide scenarios for the types of activities that teacher preparation programs can expect from their students at four phases of professional development from general preparation through their first year teaching. This publication is timely and comes on the heel of a call-to-action to the COEs by the National Council for Accreditation of Teacher Education (NCATE).

In 1997, NCATE concluded that a majority of teacher education programs were not doing what needed to be done in terms of preparing teachers to teach in the 21st century classrooms. NCATE recommended that its accreditation body recognize technology education for teachers as central to the teacher preparation process. As a result, NCATE raised the bar. Aligned with Interstate New Teacher Assessment and Support Consortium (INTASC) standards, the newest NCATE unit standards now require teacher candidates to be able to "appropriately and effectively integrate technology and information literacy in instruction to support student learning" (2000, p. 8).

States are also calling for accountability. In our state of Georgia, the Board of Regents of the University System of Georgia has adopted *Guiding Principles on Teacher Preparation* (*USG News: Principles on Teacher Preparation Approved*, April, 1998). This policy " 'guarantees' the performance of P-12 teachers prepared through [the University System's] teacher education programs for teachers who are teaching within the fields for which they have been prepared" (p.1). Under the guarantee principle, "the University System will 'take back' any teacher within the first two years after graduation from a System institution when a school district in Georgia determines the teacher's performance is less that effective in helping students make satisfactory progress...If taken back, a teacher will receive additional preparation at no cost to the teacher or to the school district" (*USG News: Principles on Teacher Preparation*, March, 1998, p. 1).

In addition, Georgia Governor Roy Barnes appointed an Education Reform Study Commission to look at ways to improve Georgia's schools. The results of the study created the *A Plus Education Reform Act of 2000* , passed into law earlier this year (2000). Out of the act came two technology-related initiatives that impact teachers and teacher preparation programs. First, the act mandates that renewable teaching certificates would not be granted unless the candidate demonstrated "...satisfactory proficiency on a test of oral and written communication skills, a test of computer skill competency, [underline added] and an assessment to demonstrate satisfactory on-the-job performance appropriate to the applicant's field of certification" (p. 65). Second, the act holds teacher preparation programs at universities and colleges responsible for their graduates' technology competencies. Universities and colleges

> shall require students in such programs to be proficient in computer and other instructional technology applications and skills including understanding desktop computers, their applications, integration with teaching and curriculum, and their utilization for individualized instruction and classroom management. There shall be a test to assess the proficiency of students enrolled in teacher preparation programs in computer and other instructional technology applications and skills. (p. 68).

An Alternative Approach: Cooperative Faculty Partnerships

In considering how to best address these accountability issues, Georgia State University explored alternative approaches to technology instruction as well as how IT faculty might be involved in preservice programs. The development of this alternative approach was made possible by a collaborative partnership established between the Instructional Technology unit and the Middle Childhood Education unit. This partnership was developed in an effort to redesign the initial certification programs at GSU to meet changing course offering calendars as well as the call for increased accountability in teacher education by professional associations and accrediting agencies. Other universities have also examined the potential of collaborative partnerships between instructional technology and initial certification programs. Duffield's (1997) account of an instructional technology–teacher education partnership at University of Colorado-Denver chronicles a four-year journey in which Duffield served as an IT consultant to the elementary methods team. What is telling is that more partnerships haven't been cited. Perhaps the answer to this can be found in examining how colleges of education are typically structured. Instructional technology programs teach to a more diverse audience than do initial certification programs, and as such, often have difficulty fitting in to the typical college of education structure. Historically, IT programs have developed from two theoretical foundations, audio-visual/media, and corporate training, design, and development; programs which focus on a broader than K-12 audience. Because of this diverse, non K-12 heritage, many universities have difficulty placing IT programs within their departmental structure. The simple solution is to set the IT unit as its own

department. While this solution does allow the IT unit a good deal of autonomy, it does have its drawbacks, particularly when everyone else in the college has a K-12 focus. Barriers can go up quickly, and what ensues is a lack of coordination and cooperation between IT and initial preparation programs. The other popular solution, housing IT with other broader than K-12 programs such as curriculum and instruction, educational psychology, or educational leadership departments, has also not been conducive to fostering partnerships with programs that offer initial K-12 teacher certification. It is possible that this division, however convenient it might be for the IT training persona, might be partially responsible for the lag in technology integration in the schools and in our preservice programs. At Georgia State University, initial certification programs fall under the jurisdiction of the Professional Education Faculty, a combination of faculty of the College of Education and the College of Arts and Sciences. The IT unit was moved several years ago to the comfortable umbrella of the largest department in the College of Education, Middle/Secondary Education and Instructional Technology (MSIT). The MSIT department prepares teachers in a variety of traditional and alternative programs for certification in Middle Childhood Education (grades 4-8) and Secondary Education (grades 9-12). Although the IT unit was housed within an initial preparation department, for several years, the IT unit continued to address the broad IT audience, and until 1997, served an approximate 80% corporate audience. It was at this same time that several factors were developing to force a change not only in the focus of the IT unit, but also of the MSIT department.

Program Performance Analysis and Formative Evaluation

In the mid- and late-1990s, several national organizations introduced and promoted standards for preservice teachers and their programs (Interstate New Teacher Assessment & Support Consortium principles, International Society for Technology in Education Technology Standards for All Teachers, as well as content specific standards). At the same time, the University System of Georgia Board of Regents determined that all institutions would move from a quarter to semester calendar beginning with the 1998-99 academic year. The USG Board of Regents guarantee principle mentioned earlier, as well as pending NCATE and APACE (university-wide Academic Programs and Continuing Education self-study) reviews, precipitated the entire MSIT department to participate in a program performance analysis and formative evaluation. In examining all programs, a culture of cooperation between the IT unit and the teacher preparation programs was established.

With an opportunity to revamp the entire Middle Childhood Education program, a Middle Childhood Committee (MCC) was formed. This committee was composed of faculty representing all areas of study for the Middle Childhood Education program: language and literacy, mathematics, science, social studies, reading, and instructional technology. The MCC examined all required guidelines for initial preparation programs at the state and national levels. Input from faculty and student evaluations and surveys were also incorporated into the analysis. All components of the middle childhood undergraduate program were analyzed: program admissions and exit criteria, course offerings, course experiences, field experiences, scheduling of classes, scheduling of student-cohort groups and faculty teams. As a result, major program changes were implemented. This paper focuses on two outcomes of this cooperative relationship which effected how the IT unit prepared and advised preservice teachers and interacted with the initial preparation programs: the redesign of the stand-alone technology course to a technology-methods course and the establishment of a standards-based alternative assessment process for all prospective middle grades teachers.

Technology-Methods Course Development

As indicated earlier, many teacher education programs focused on either a stand-alone course, or on a model of technology infused throughout all teacher preparation courses. Some schools, including GSU, have opted to do both. Kovalchick (1997) offers, "An approach that I have found useful is to blend elements from both a competency based models and integrative models into a reflexive approach in which students use technology as both learner and teacher. In this way, preservice teacher education students are challenged through direct experience to generate personally relevant conceptions of technology" (p. 31). Smaldino and Muffoletto (1997) also promote a combination approach. "Our model attempts to blend the contents of the existing single course with the need to nurture technology applications within methods and other courses. Thus, students first gain an understanding of the applications of technology in education in the broad sense, with an in-depth examination of how technology supports learning in specific content areas" (p.37).

Prior to 1997, the technology course at GSU was a stand-alone, skills-based course that focused on the use of technology as a teacher tool. Content included such technology usage as word processing, mail merging a letter home to parents, and using a spreadsheet program to calculate grades. Little to no learning theory or instructional methods were included in the lab-based course. In addition, the technologies covered were basic in nature –

telecommunications coverage consisted of e-mail, and in later years, the Internet as a database of lesson plans. As pedagogy played virtually no role in the course, students were allowed to substitute a passing grade on a pencil and paper competency test.

In 1997, at the request of the Middle Childhood Committee, the standard skills-based preservice technology course underwent a major redesign. In the first year, the course refocused from teacher-resource-based, skills-based to a technology-integration-into-the-curriculum approach. This refocus was done in part to address a potential cause of low technology adoption in preservice teachers: deficiencies in technology-integration methods (Leggett & Persichitte, 1998).

In fall semester 1998, the IT unit worked with the MCC to redesign the course to further situate the course content in teaching methods. While maintaining a lecture/lab approach, a WWW-based, resource-based learning environment (RBLE) was introduced as part of the course (Hill, 1999; Shoffner, 1999). The course, and its related resource laden WWW site, incorporates a problem-centered, activity-based approach where the computer applications are anchored in authentic and familiar contexts in which teaching and learning occurs (Cognition and Technology Group at Vanderbilt, 1991; Vygotsky, 1978). This approach is based on the view of an open learning environment in which learners have direct input on the direction of the course based on their needs (Hannafin, 1999; Hannafin, Hall, Land, & Hill, 1994). In navigating through the environment and tackling challenges, it is proposed that students will also develop self-directed learning skills, which will serve them well as they enter the teaching profession. Along with confidence in using the technology, self-directed learning skills have been identified as a characteristic of successful technology-using teachers (Shoffner, 1996). The RBLE can be accessed at http://msit.gsu.edu/IT/3210/index.html

At the same time, the course serves as an introductory teaching methods course, introducing preservice students to such concepts as instructional objectives, lesson planning, evaluation, and assessment. The course offers more than teaching the basic ADDIE instructional design model as a way to develop lesson plans while teaching about technology integration skills. In the *Technology for Teachers* course at GSU, the technology is immersed in learning about what being a teacher entails – briefly, planning, learning theory, instructional strategies, classroom management, and assessment. Our hope is that by introducing the technology and the methods together, early in the program, that a) students will forever forward view technology as natural to the learning process as the textbook and the pencil; and b) both the technology *and* the methods will be reinforced throughout their other courses at GSU. One way in which continuity and reinforcement occurs is in the use of portfolios for assessment. In the *Technology for Teachers* course, preservice students generate a portfolio documenting the design of technology-supported instructional environment that facilitates student learning through the design and development of student-centered learning activities. The use of portfolio development and assessment continues throughout the remainder of Middle Childhood Education program of study.

MCE Standards Based Alternative Assessment

A second outcome of the MCC was the establishment of a continuous process of portfolio development and assessment for all students. In response to the Board of Regents guarantee principle, increasing accountability in teacher preparation programs, and the Middle Childhood Committee's recommendation to strengthen the preservice teachers' overall professional development, the committee recommended that the program include an exit assessment that examined the student's ability to apply what they learned in all their courses in some cohesive manner. After examining several assessment models, both traditional and alternative, a portfolio development process with benchmarks throughout the program and final submission as an exit requirement was adopted.

Although most skills and concepts are developed in individual courses, it is important that preservice teachers have command of these concepts and skills with knowledge of how to integrate these concepts and skills into all aspects of teaching. Therefore, a major goal of portfolio requirement was to develop the preservice students' ability to integrate several components of the program across all courses and to develop knowledge and skills in applying these components in all aspects of teaching. Among key skills and concepts under discussion were: integrating technology, developing and implementing lesson plans and assessment strategies, developing and implementing a classroom management plan, working with diverse learners, developing as reflective practitioners, and so on. After a review of the principles of the Interstate New Teacher Assessment and Support Consortium (INTASC), the committee agreed that the principles of INTASC encompassed and addressed all major components of the middle childhood program and could be used to facilitate the development of the preservice teachers. Thus the committee established portfolio guidelines that focused on the ten principles of INTASC. The INTASC Principles are included below.

Principle 1	The teacher understands the central concepts, tools of inquiry, and structure of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students.
Principle 2	The teacher understands show children learn and develop and can provide learning opportunities that support their intellectual, social, and personal development.
Principle 3	The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.
Principle 4	The teacher understands and uses a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.
Principle 5	The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.
Principle 6	The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
Principle 7	The teacher plans instruction based on knowledge of subject matter, students, the community, and curriculum goals.
Principle 8	The teacher understands and uses formal and informal assessment strategies to ensure the continuous intellectual, social, and physical development of the learner.
Principle 9	The teacher is a reflective practitioner who continually evaluates the effects of his or her choices and actions on others (students, parents, and other professionals in the learning community), and who actively seeks out opportunities to grow professionally.
Principle 10	The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.

Table 1: Interstate New Teacher Assessment and Support Consortium Principles (Council of Chief State School Officers, 1999)

Through the continuous collaboration of the middle childhood committee, guidelines for portfolio development were documented, benchmarks were established, implementation procedures were outlined, and an assessment instrument and procedures were designed. The committee reviewed course syllabi for all MCE undergraduate education courses to determine which INTASC principles were met in each course. The principles were aligned with the program's schedule of course sequence and experiences to establish which principles the preservice students would be able to address at established intervals. These intervals serve as benchmarks to assess the students' portfolios.

The committee decided that the preservice students would write a narrative for each principle and provide artifacts to substantiate their knowledge, growth and experiences in the program. In the narrative, students are required to discuss personal accounts that address all concepts within the principle. In that the student is required to address all concepts of the principle in the narrative, it was clear that a specific artifact might address only one or two concepts within a principle. Therefore the students are required to explain within the narrative how the artifact addresses a specific concept.

The committee established benchmarks based on experiences acquired within the prescribed course sequence. Students are expected to complete all content courses prior to the senior year in the program. The University System of Georgia Board of Regents requires, within a 120-hour semester program, that middle childhood education (MCE) majors have two content areas of concentration -- 12 semester hours in a major area and nine semester hours as a minor area. During the junior and senior years the preservice teachers are immersed in teacher education courses that include field experience components. The INTASC principles and benchmarks were aligned with the Professional Studies and Student Teaching coursework: introduction to middle schools, instructional technology, teaching reading block, topics courses in the content areas, methods block, diversity course and student teaching. The committee established the following schedule as benchmarks for assessing student growth and development in the program. Upon completion of the Professional Studies courses (at the end of the junior year), the MCE students are assessed for meeting INTASC Principles, 1,2,6,7,8, and 9. Prior to entrance to student teaching (midway in the senior year), MCE students submit portfolios demonstrating competency for all ten

principles. Next the committee established a system for portfolio evaluation, introducing the students to the process through seminars and coursework, and assigning faculty advisors to assist students.

Students are guided through the portfolio process. Early in the semester in which students begin Professional Studies course, seminars are delivered by the MCC to introduce the portfolio process to the preservice students. The *MSIT Middle Childhood Education Program Portfolio Evaluation Guide* (Many *et al*, 1998) introduces students to the INTASC principles, and explains the portfolio assembly and evaluation process. The *Converting Your IT 3210 Learning Environment Portfolio To The Junior-Year MCE Program Portfolio Guide* (Shoffner *et al*, 1998) presents strategies for reformatting the Learning Environment Portfolio produced in the *Technology for Teachers* course to the Professional Studies Portfolio.

The portfolio is accepted in a variety of formats. Students may submit an electronic portfolio (on compact disc), a website, or a notebook for faculty review. (The majority of students in program continue to favor the notebook version.) Upon portfolio submission, the MCC meets and collaboratively assesses each portfolio. A simple rubric is used to assess competency in regard to INTASC Principles. Faculty reviewers indicate whether each principle was "not met," "met," or "met in an exceptional manner," and give feedback on the documentation of each principle. Students receiving a score of "not met" on any principle are required to meet with a faculty advisor to discuss what must be accomplished to achieve successful experiences and documentation for the principle.

The portfolio review process was implemented in the fall 1998 semester. Due to the iterative nature of the assessment process, all students met all principles prior to graduation. The portfolios generated by students at the close of their coursework consistently demonstrated a clear understanding of the theoretical underpinnings and application of teaching and learning knowledge. Student narratives provided rich and reflective insight into how each preservice teacher was able to apply what was learned in the college classroom to the middle grades classroom. While students were initially resistant to the added work of compiling the portfolio, by the end of their program, students enthusiastically espoused the benefits of the portfolio process in allowing them to compose a holistic vision of their preparation and educational philosophy, as well as the ability to articulate this vision. Many students comment on the benefits of the portfolio process in preparing them to successfully interview for permanent employment.

Students in the first cohort to complete the portfolio process are now certified educators employed in the schools. Several research-based initiatives are underway to examine their preparedness as inservice teachers. In addition, a study is in progress that will examine the "INTASC" portfolios for the demonstration of technology competencies (NETS-T Profiles). The MCC committee continues to formatively evaluate their program in light of national and state directives, as well as student needs.

Collaboration & Cooperation: Contributing Factors at GSU

The authors would be remiss if we did not reflect on our case study to determine what factors may have contributed to our success, and from that reflection make suggestions on how IT units at other COEs might do the same. Our reflection produced three core factors that contributed to the success of our collaboration: the nature of middle grades, a committed faculty, and a culture of mutual respect within the committee, the department, the college, and the professional education faculty.

It is the nature of those who teach at the middle school level to be cognizant of multiple disciplines as well as flexible. Middle schools typically employ a teaming approach to instruction, where students are assigned to a team of teachers who cover the core subjects. To operate successfully in the team structure, middle school teachers must be flexible and cooperative. This flexibility and cooperativeness must also be present in those who prepare middle school teachers. Furthermore, teacher licensure at the middle grades level is across all content areas. Although preservice teachers prepare in a major and a minor content field, they are licensed to teach all fields, and must be ready to teach in any of the four core content areas and reading. Although it is possible to receive an advanced graduate degree in Middle Childhood Education, most faculty members teaching in our program are from a specialty content area (mathematics, language and literacy, reading, science, social studies, or instructional technology). It is imperative that those who prepare middle grades teachers work together to facilitate this broad multidisciplinary preparation.

A second factor that contributed to the success of the partnership at GSU is the nature of the faculty. Although the faculty differed in their fields of specialty and their experience in the K-12 and college level, all of the faculty involved in the Middle Childhood Committee were committed to making this program work. Georgia State University has a long history of preparing outstanding middle school educators, and the faculty was and is committed to continuing this tradition. The committee met regularly, at times weekly, to plan the program, the technology methods course, and the portfolio assessment process. One reason for the MCC's commitment level was that they were given ownership of the program by a very supportive department administration. Committee members continue to give their time to meet and review portfolio submissions each semester.

The third factor contributing to the partnership's success was the establishment of a culture of mutual respect among the committee members. As committee members come from a variety of disciplines, each had something to bring to the table. Early on, the IT faculty members on the committee were able to establish their credibility as educators. All content areas, including instructional technology, were considered equally important to the preparation of new teachers.

Suggestions For Establishing Partnerships

Although the IT unit at GSU is strategically placed to facilitate such collaborative partnerships, the authors believe that some steps can be taken to nurture such partnerships, even when the IT unit is housed outside the initial preparation programs. We offer the following suggestions to establish cooperative partnerships with teacher education program units.

First, instructional technology faculty members who wish to work with teacher education programs must become familiar with current issues in teacher education preparation and in K-12 schools. As it is possible or even likely that an IT faculty member may not be a certified K-12 teacher, other steps may be taken to develop an understanding of schools. IT faculty members can volunteer to collaborate with a K-12 teacher, designing and team teaching a unit of study. Serving on school technology committees is yet another way IT faculty can develop and understanding of the K-12 school culture.

Second, the IT unit should ideally find a single teacher preparation unit or team that is willing to work with an IT consultant. Many in IT would argue that the integration of technology should take place in a systemic fashion. However, an incremental approach is more likely to be successful, and in this instance, success will likely breed more success. In short, pick a single program with whom to establish a rapport, and then work on establishing a relationship.

To nurture this budding relationship, it is essential that the IT faculty member(s) attend teacher education department or unit meetings. It is at these formal meetings that the IT faculty can establish their credibility as educators by providing information on technology integration strategies while also garnering information about the certifying program. Duffield (1997) concurs, "Probably the most important element of the second year was the time I spent planning and working with the elementary methods team. I was able to become familiar with the content and methods they used and begin discussions about how technology could be integrated into the courses. I also served as an advocate for technology, keeping it part of every discussion" (p. 24). In order to serve as an advocate for technology, IT faculty must stay current with research and methods in instructional technology integration strategies.

Conclusions

Accountability directives for new teacher preparedness are not likely to go away any time soon. Instructional technology preparation will likely continue to be a critical issue in teacher education for many years to come. Instructional technology units can no longer teach only to their corporate training design and development roots. For colleges of education to successfully prepare teachers for the 21st century, instructional technology will need to be more cohesively included in teacher preparation programs. It is imperative that more cooperative partnerships be established between instructional technology units and initial preparation programs. The authors encourage IT units to initiate and nurture these partnerships, making possible more innovative approaches to this important field of study.

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