A Collaborative Model for Influencing the Technology Integration Behaviors and Dispositions of Preservice Social Studies Teachers

Raymond Jones, Ann Cunningham, and Loraine Moses Stewart

Abstract

Collaboration among faculty can enhance the learning experience for preservice teachers and reinforce the integral role of technology in teaching, learning, and professional development in social studies education. Organized around the Performance Profiles outlined by the National Educational Technology Standards for Teachers (NETS•T), this article details how faculty collaborate to develop and refine social studies instruction by sharing technology best practices and resources, by designing integrated activities and course assignments, and by working together to provide meaningful professional experiences for preservice teachers in both elementary and secondary programs. The authors explain how the collaborative model builds on many faces of the NETS•T and detail how new and emerging technologies are easily and effectively integrated once the culture of collaboration is established.

Integrating technology into teacher preparation has been a challenge for many years. Questions surrounding methods, tools, access, and the ability of faculty to model appropriate integration strategies have confounded teacher preparation programs since the advent of the microcomputer. The last twenty years of research on technology and teacher preparation have yielded results that can inform and guide current practice. Many authors have addressed issues surrounding technology integration, and their research outlines the value of integrating technology throughout all aspects of teacher preparation (Beasley & Sutton, 1994; Dell & Disdier, 1994; Fratianni, Decker, & Korver-Baum, 1990; Strudler, 1991; Todd, 1993). Collaboration among teacher education and arts and sciences faculty is instrumental in preparing future teachers to integrate technology effectively, and models exist to help facilitate systematic efforts (Handler & Strudler, 1997). Research on teacher preparation programs recognized as outstanding by the Office of Technology Assessment in 1995 helped pinpoint key factors necessary for successful technology integration (Strudler & Wetzel, 1999).

The National Educational Technology Standards for Teachers (NETS•T), built on what is known about appropriate technology integration and teacher preparation, provides an excellent framework that outlines technology expectations for teacher candidates within a four-phase approach to teacher development (International Society for Technology in Education [ISTE], 2000). Each phase of teacher preparation includes a set of guidelines that teacher candidates should know and be able to do, as well as a list of essential conditions the institution must provide in order for teacher candidates to meet the expectations outlined by the NETS•T. This document moves teacher preparation and technology forward by establishing an organized and sequenced set of expectations and helping institutions recognize components necessary to produce teachers capable of addressing the needs of 21st century classrooms. In 2002, the International Society for Technology in Education presented seven Distinguished Achievement Awards for integration of the NETS•T, and the institution described in this article was a recipient of that award. This paper describes a model of technology integration into social studies teacher preparation in both the elementary and secondary programs that is built on a shared departmental vision, national standards, and collaboration among faculty.

Developing Essential Conditions for Technology Integration

Recognizing that meaningful and effective technology integration is a result of successfully combining multiple variables, the NETS•T identify ten components necessary to create the essential conditions for quality teacher preparation, and provide examples for each of the four phases of a teacher's development (ISTE, 2000). A Performance Profile is outlined for each phase; the profiles are defined as the General Preparation Performance Profile, Professional Preparation Performance Profile, Student Teaching/Internship Performance Profile, and First-Year Teacher Performance Profile (ISTE, 2000). Each profile outlines a set of skills and dispositions a teacher candidate should possess upon completion of the profile, and each skill is linked to the NETS•T. This framework is a helpful tool for designing a plan that ensures a balanced and effective technology-enhanced teacher preparation program. The success of an integration plan depends on these essential conditions, and a brief overview of how they are addressed in our teacher preparation programs is vital to understanding the social studies integration model.

Many of the NETS Essential Conditions are met because of institutional and departmental changes that were initiated in the mid 1990s. A university-wide examination of the future of the institution resulted in sweeping reforms that included a new laptop initiative for all undergraduate programs, including substantial measures for technical support, training, renovation of teaching spaces, and wiring for ubiquitous Internet access. For teacher candidates, this initiative provided laptops for all undergraduate students, Ethernet connections across campus (including dorm rooms), and a standard load of software that includes productivity, telecommunication, and multimedia development tools. All students receive laptops and printers their freshmen year and turn them in for updated models their junior year. Faculty take part in the same technology program and standardization of hardware and software facilitates teaching in addition to streamlining technical support.

Also, in the late 1990s, a tenure-track position was created for an assistant professor of instructional design whose task was to consolidate the departmental approach to technology by teaching courses in elementary and secondary technology and guiding the direction of technology in both programs. Together the new faculty position and the new level of technology access on campus were catalysts for a department-wide integration plan. Scrutiny of the scope and sequencing of elementary and
secondary courses led to the alignment of the content methods and the required technology courses so that all teacher candidates take the courses concurrently. This arrangement fostered collaborations between the social studies methods and technology faculty that require all teacher candidates to integrate technology appropriately into productivity, instruction, assessment, and professional development. This strategy also promotes the continued professional development of the faculty and fosters a culture of appropriate technology integration.

**Overview of Social Studies Programs**

The professional preparation sequence for undergraduate elementary education majors and secondary social studies education students begins with Foundations of Education and Educational Psychology courses. (See Tables 1 and 2.) A classroom field experience component helps students make connections to the core ideas of each of these courses. At the heart of the professional preparation phase is the university-issued laptop computer with an expansive standard load of software applications, as well as hardware such as CD-burners and a DVD player.

Our department seeks to graduate knowledgeable, skillful, resourceful, reflective decision makers who are aware of the outcomes of instruction and who are deliberate about how they reach them. Our integrated approach depends, in no small part, on ideas at the heart of NETS-T Standard II: “Teachers plan and design effective learning environments and experiences supported by technology” (ISTE, 2000). Teachers operationalize their work in classrooms by making choices in light of intended outcomes, and a central goal of our programs is to help teacher candidates become skillful at supporting student learning through appropriate selection and use of tools and resources. Developing in them the capacity for seamless integration of technology in their own teaching requires a similarly smooth, but not invisible, weaving of modern tools into their preparation program.

**Technology in Education**

Not surprisingly, the course dedicated to investigating the role of technology in education also serves as the leading indicator of its infusion in our programs. There, preservice candidates use digital video cameras and digital editing software to create anchors for instruction; develop word processing and desktop publishing products used, for instance, to enhance parent and student communication; manipulate databases for management of vital student and content information; plan, manage, and evaluate external learning opportunities through spreadsheet analysis; develop static and interactive Web sites for professional self-representation and to guide learning activities; develop multimedia presentations using advanced PowerPoint features, including sound, pictures, and video; draw out targeted and specific relevant DVD clips of short duration with barcodes and readers; and employ both processing and editing applications that foster the assumption of a reflective stance and disposition.

Teacher candidates learn about and experience these various electronic resources in the technology class, but they also consider the content and skill objectives of social studies in order to recognize the role and utility these tools possess. Their work in Methods provides a collaborative incentive for blurring the artificial lines between the classes; what is learned in one class becomes fodder for products of learning in the other. Both courses work together to develop and refine the candidates’ skillfulness as potential teachers.

![Table 1. Course Sequences for Undergraduate Elementary Social Studies Program](image)

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shows a diagram of a case study on motivation theory. Given a narrative about a fictitious pupil, students are asked to delineate the relationships between the theoretical principles at hand and the appropriate pedagogical responses. This interaction with meaningful content facilitated by software allows the student to process the content more deeply while gaining experience with a quality educational application that they can use in their own coursework and their future classrooms.

Students research accountability issues in a state of their choice and use the Internet as their primary source of information. Then, they design a PowerPoint-enhanced presentation of their findings to the class and share their presentation asynchronously using Blackboard. With these new skills and dispositions, candidates turn their attention to developing and communicating central concepts in the realm of social studies, and they bring an experienced hand to the enterprise.
Collaboration in the Elementary Education Major

The elementary course of study invites many opportunities for collaboration on projects and methods for fostering appropriate integration of technology into teaching and learning. During the spring semester of the junior year prior to student teaching, all candidates are enrolled in a semester of education methods courses that run concurrently with the required Technology in Education course. (See Table 1 for an outline of the typical course of study for elementary education majors.) The technology course takes an elementary education focus for these students, and faculty collaborate on projects and activities in an effort to maximize the effectiveness and quality of the candidates' experience.

The elementary program is organized around three interrelated components of instruction that complement the NETS*T Performance Profiles and offer students the opportunity to develop their content area competence while preparing to become outstanding elementary teachers and leaders. Broad liberal arts study in the General Education phase is followed by major studies in elementary education. All elementary education majors also choose a minor or concentration in one of the following five areas: language arts, social studies, foreign language, science, or mathematics. (See Table 1.) Through the course work and field experiences, students learn to design developmentally appropriate learning experiences that integrate technology to meet the needs, capabilities, and interests of children in kindergarten through sixth grade.

The collaboration between technology and content methods began with Teaching Elementary Social Studies in a Pluralistic Society, one of three methods courses taken during the spring semester of the junior year. After the alignment of technology and methods courses four years ago, the technology and elementary social studies methods professors committed to aligning the requirements and standards for their courses. This re-alignment has greatly enhanced the quality of products created by students in both courses. Much of the collaborative planning takes place at the beginning of the term, but conversations are ongoing throughout the semester. Faculty debrief at the end of the semester and make decisions about how to revise and improve strategies for the next term. The rapid changes in
state standards, software, hardware, and other digital resources require an ongoing review of course materials. End-of-term debriefing provides an excellent opportunity to make plans for the future while engaging in conversational reflection about how to improve the courses.

Collaboration also provides an excellent opportunity for addressing the content and technology standards outlined by the state department of public instruction, the National Council for the Social Studies (NCSS), and ISTE's National Educational Technology Standards Project (NETS). In addition to the usual content standards and expectations specified by most states, our state standards include specific technology competencies for the elementary grades that are assessed with a mandatory computer competency test in the eighth grade, now required for graduation. These state expectations increase the need for future teachers to be knowledgeable in appropriate methods for integrating technology effectively.

Collaboration in the elementary social studies program happens on a variety of levels: faculty share technology skills and resources, faculty design integrated activities and course assignments, and faculty work together to provide meaningful professional experiences for teacher candidates.

One example of a shared collaborative assignment is the critical evaluation of specialized social studies software programs (NETS-T II and III), which requires teacher candidates to discuss strategies for critiquing and evaluating software programs in the technology course. Toward the end of the semester when candidates have experienced a variety of productivity and multimedia software applications in the technology course, each candidate is assigned a social studies software program to examine, evaluate, and present to the group on Social Studies Software Presentation Day. An entire social studies class period is devoted to sharing and discussing the software programs in small groups. The value of the collaboration between the technology and methods courses becomes apparent during this exercise, when the candidates are able to think more deeply about their programs, synthesize their awareness of features helpful to elementary students, and offer thoughts about strategies they could use in conjunction with the software program to make it more appropriate and useful for their students. These critical evaluation experiences help candidates begin to bridge the artificial boundaries of course titles and see technology as an integral part of teaching all students.

Faculty collaborate to help teacher candidates appreciate the value of sharing information through the Web. All teacher candidates in the elementary program create a professional Web site in the technology course that is then used to house and display products and performance evidence from all courses, particularly methods. Teacher candidates share examples of products that demonstrate their competence as a technology-proficient teacher as well as their reflections on their growth as a teacher. Candidates further develop their critical evaluation skills by selecting, annotating, and publishing links to useful Web sites for elementary educators, students, and the school community. Upon completion, candidates have a professional Web site that demonstrates not only their ability to use a Web editor for simple formatting and link creation, but more important, demonstrates their ability to create appropriate materials for teaching and learning that integrate technology appropriately and effectively. Further, they understand the value of providing an asynchronous mechanism for sharing assignments, resources, and information with parents, students, and administrators (NETS-T I and VI). The social studies methods class contributes to the Web site development by requiring the completion of an Electronic Portfolio, a collection of Web resources that can be used to support the curriculum goals outlined in the state social studies standard course of study. Other methods courses contribute by requiring candidates to publish course assignments and resources on content-specific pages on the site. The result of this collaboration is that candidates use their technology skills to complete meaningful and relevant activities, and the collaboration reduces the amount of work for the candidates while greatly increasing their time to focus on developing quality culminating products.

A collaborative project of great importance during the spring semester is the preparation of teacher candidates to present their work at the annual state social studies conference. This experience blends technology and social studies content with an authentic professional development experience (NETS-T V). The products from one or more of the class assignments are always the premise for their presentations, and faculty collaborate to identify which assignments and products will be presented at the conference. One notable conference presentation was candidates sharing how they used Inspiration to create a concept map depicting the different concepts from the standard course of study that could be taught through the anchor of a multicultural children's book. Figure 2 presents an example of how one student developed interdisciplinary curriculum connections to Peter's Chair by Ezra Jack Keats. This activity capitalizes on skills developed in the technology course to create visual representations with Inspiration, and the extension to represent curriculum connections in a methods course is beneficial to teacher candidates as they grapple with the complexities of integrating content in the elementary grades. The presentation at a state social studies conference extends the value of their efforts into the realm of professional development and helps teacher candidates develop an appreciation for their contributions to a community of colleagues.

The collaborative model has proven to be beneficial for helping the elementary program achieve its goals for integrating technology throughout the course of study for the elementary major. The addition of a full-time clinical faculty member has helped to increase the quality and frequency of technology integration in the field experiences and the Arts and Movement courses, and the digital video anchors are also now linked to a curriculum assignment in the science methods course. The most important outcome of this intentional and strategic collaboration is the effect on the instructional design strategies of our teacher candidates during student teaching and in their own classrooms.

**Secondary Social Studies Methods and Materials**

In the secondary programs, there is a particular emphasis on decision-making, the core of instructional design that takes root early in the program as students understand the sociology and psychology of diverse learning populations. The contexts in and processes by which learning occurs are directly related to choices that teachers face and make to achieve their instructional ends. A common framework for planning is used to understand knowledge acquisition, skill development, and affective outcomes in educational psychology; it becomes the organizing framework for developing conditional knowledge of strategy selection and use in methods; it supports the instructional design process for conceiving of technology units; and it governs daily planning for the duration of the student teaching internship. The goal is to develop beginning teachers whose integration of technology is neither sporadic nor haphazard, but strategic and deliberate given the motivating outcomes of instruction.

During the redesign of the secondary programs in 1999, faculty made a conscious effort to align the technology and methods courses so that, as knowledge of and comfort with the technological resources increase, students' pedagogical knowledge can also expand. Anchoring their growth in skillfulness and resourcefulness is the common framework for instructional decision making, which is grounded in and based on fundamental principles of effective practice (i.e., Marzano, Pickering, & Pollock, 2001). Also employed as a guide are the Essential Skills developed by the National Council for the Social Studies, which focus on (1) acquiring information, (2) organizing and using information, and (3) interpersonal relationships and social participation (NCSS, 1994). By focusing especially on what students should be doing in social studies, the candidates have a framework for making choices about the ways technology supports educational goals.

Among the most important and essential resources in social studies (but perhaps more a matter of first among equals) is the World Wide
Web. What has occurred since the introduction of the Mosaic browser in 1993 and the popularity of Netscape a couple of years later has transformed a central tenet of social studies teaching and learning: access to information. No longer limited by single classroom sets of textbooks or pre-determined primary source documents in state-approved textbooks, students and teachers find that the Web opens up the world for exploration, documentation, analysis, and consideration. At the same time, our candidates learn and apply principles of legal, ethical, and safe use of online information and develop awareness of strategies for helping their students become more discerning consumers of Web content. These skills are reinforced in both the methods and technology courses and are aligned with NETS•T III, IV, and VI. Much of the world of social studies—and answers to no shortage of social studies essential questions—can be found in whole or in part on the Web, making familiarity with resources and issues surrounding classroom use of the Internet imperative.

Methods students learn about Web-based student and teacher resources that support productive learning and engagement, such as the Library of Congress American Memory Collection. In both Methods and Technology, they begin identifying relevant Web sites tied to content and instructional goals and draw on them both for their instructional design projects and in their student teaching. Resources for enhancing pedagogy and scaffolding of student learning are also modeled and used. For example, ReadingQuest.org offers instructional guidance and classroom-ready aids to enhance student comprehension of content and concepts in social studies. This site is introduced to and used by candidates as part of methods instruction and then is heavily utilized by them in their field experiences in high school classrooms.

Candidates also depend on the Web to access national, state, and local standards for social studies; isolate and identify problem- and inquiry-based learning sites; uncover strategies and activities to supplement their nascent instructional designs; communicate with university colleagues and distant but interested others; and even to house their own interactive and inquiry-centered activities. The technology course educates students in developing and publishing their own Web sites, focused on their social studies content and pedagogy, as well as their future professional practice. Many then use their Web sites as resources, as instructional tools in their student teaching placements, and as marketing tools when the time comes to find a permanent teaching position. Towards the end of the methods
semester, students develop their culminating instructional design projects not only to produce evidence of their grasp on central methods concepts, but also to exhibit the intentional and deliberate consideration of appropriate resources. The most obvious collaboration of methods and technology, this project provides students with an opportunity to develop technology-enhanced curricula while reaping the benefit of advisement from both content and technology experts. The faculty work together to mentor teacher candidates during the creation of this project, and co-determine the development of these emerging teachers as knowledgeable, skillful, resourceful, and reflective practitioners.

**Technology in the Student Teaching/Internship Performance Profile**

During the senior year, students are assigned to the classrooms of master and mentor teachers who themselves vary in the nature and breadth of their technology skills. No longer safe in the sanctuary of our university classrooms, the candidates come face-to-face with real students, typical classrooms, standardized technology and text resources, and the unyielding pressure of the daily schedule. In a sense, the internship brings students face-to-face with their beliefs about and skills in teaching; there it can be seen whether students have internalized and adopted the decision-making frameworks, determined appropriate methodologies, and adapted and utilized appropriate technologies to support pupil learning and teacher productivity.

Soon after arriving in their placements, students analyze and consider the resources available to them onsite. Their laptop is a central tool of production, data storage, and self-analysis. They also return to campus frequently to access specialized software in a departmental lab, resources for use in their classrooms, and multimedia and digital video tools. One student teacher was placed recently in a classroom where the university was piloting the use of personal digital assistants to facilitate assessment and feedback; her school was also equipped with traveling wireless laptop computer centers that teachers can bring into their classrooms to support research or the creation of culminating products of learning. Through institutional and departmental efforts, teacher candidates experience a variety of classroom environments that prepare them to integrate technology with social studies in a meaningful and appropriate way.

Visits to teacher candidates’ classrooms afford observers ample opportunity to witness skillful technology integration in action. The interns use Web-based learning resources from ReadingQuest.org and exploit the online teaching treasures and archives of institutions such as the Library of Congress (www.loc.gov), the United Nations High Commissioner for Refugees (www.unhcr.ch), and the United States Holocaust Memorial Museum (www.ushmm.org). Regular use of concept-mapping software such as Inspiration serves not only as a visual organizer and guide to units, concepts, and processes, but one recent student teacher even used it to map out a thorough, extensive, and highly sophisticated analysis of the history of labor. He developed it into a game format, which was played to great educational effect in small groups of four. It allowed students to develop a holistic and a particularized view, the result of exploration and discovery of the intricate, nuanced, and iterative progression of the labor movement. Student teachers develop WebQuests to promote inquiry and exploration, and they invite and encourage their students to develop Web-based and PC-based multimedia projects. In this, they are drawing on the previous semester’s models of learning and instruction.

Efforts to refine the process for assessing one’s professional growth led to the recent integration of digital video tools into the secondary programs. Introduced first in the Technology in Education course as a tool for anchoring instruction and creating motivation for learning, the interns are made aware of their video portfolio expectations, and quickly recognize these resources as aids to serious and productive professional development. The social studies preservice candidates use digital video for capturing several lessons across the internship semester. They identify and isolate significant episodes as a means to engage in reflective analysis of learning and growth. With the department’s Apple iBooks or iMacs and digital editing software (primarily iMovie), the candidates focus attention on key aspects of practice revealed in the video record and tie them not only to the department’s conceptual frameworks but also to the professional standards issued by NCSS (and, among our graduate students, the propositions put forward by the National Board for Professional Teaching Standards). Their culminating performance at the end of student teaching is a multimedia presentation of self as a professional, as an educator, as a reflective practitioner, and as a student of one’s own experiences. This project exemplifies how collaboration between methods and technology improves the educational experiences of our teacher candidates; it offers a balanced approach to integration that focuses on reflective practice by using technology tools that force the candidate to think critically about practice. The design of the program sequence scaffolds the growth and development of teacher candidates as confident and proficient new teachers prepared to be leaders in their own classrooms, schools, and districts.

**Technology Integration in the First Year Teaching Performance Profile**

Many of the expectations outlined for first year teachers in the NETS*T are a continuation of the student teaching/internship phase of teacher preparation. Graduates from all programs leave the university with their own laptop loaded with productivity and telecommunications software, which helps them prepare materials for teaching and maintain professional contact with faculty and colleagues.

The greatest testimonies to the power of collaborative partnerships in teacher preparation and social studies are the successes of our graduates during their first year of teaching. One such example is Jennifer Shelton, a new teacher and secondary social studies master’s program graduate, who moved to the western part of our state to take her first teaching position. During her first year she introduced her school and district to Inspiration concept-mapping software and convinced the administrators of the value of this tool for supporting instruction. In the summer of 2003, her school district negotiated with Inspiration for a district-wide site license of that software program. Jennifer has also demonstrated her leadership in her content area by contributing to the selection of a social studies text for the district and has used her PowerPoint skills in a workshop she led to help social studies teachers in her school negotiate recent changes in the world history curriculum. Based on knowledge developed in her methods course about the principles of considerate text, her experiences with ESL students during student teaching, and technology skills developed and refined during her course of study, Jennifer was prepared to participate as a leader in important decision making at her school and in her district.

This anecdotal evidence of our graduates’ effect on their schools during their first year of teaching is in part due to the nature of the individual, but it is also tied to the intentional efforts of our programs to foster the development of teacher leaders. Our goal is to prepare new teachers who are knowledgeable in their content and capable of communicating that knowledge to students, who are committed to professionalism and professional development, and who are able to use their technology skills to support all facets of being a professional educator.

**Conclusions and Future Directions**

We interweave these teaching and technology experiences to help our candidates develop not only skills but also the dispositions of thoughtful and resourceful professionals. The collaborative model is instrumental in this process. Our program design supports technology-enhanced learning and promotes ongoing professional development. Future steps for our department include the development of an Emerging Teacher Leaders Network to provide a structure for supporting our new teachers through
their first three years in their own classrooms. Features of this program include an interactive Web site to help graduates maintain contact with their colleagues around the country; a discussion forum for posting and responding to questions posed by faculty, cooperating teachers, and colleagues; financial support for graduates presenting at state and national conferences; and a January mini-conference that helps re-connect graduates with methods and teaching strategies emphasized during their preparation. With personal computers in hand, our graduates are able to take advantage of this support network, which is intended to enhance their success and maintain their interest in the profession.

Technology is, by nature, always changing, and we see in its advance new avenues for collaboration. Already, our faculty are working more closely together and building for ourselves more collegial relationships. We also believe that collaboration must be modeled for our students; the capacity of our graduates to deliver quality social studies instruction will be affected by how well they adopt and implement their own models of professional collaboration.

References


CONTENTS

COLUMNS

EDITOR'S REMARKS

TACTL: An AERA SIG Home for Technology in Teacher Education
Ann Thompson

74

PRESIDENT'S MESSAGE

History Beckons: SIGTE Convenes in Philadelphia
Melissa Person

75

ARTICLES

A Collaborative Model for Influencing the Technology Integration Behaviors and Dispositions of Preservice Social Studies Teachers
Raymond Jones, Ann Cunningham, and Loraine Moses Stewart

77

Emergent Reflective Dialogue Among Preservice Teachers Mediated Through a Virtual Learning Environment
Claudia Khoury-Bowers

85

Seeking Alternatives to Inservice Technology Workshops From Teachers' Perspectives
William Sugar and Kenneth Wilson

91

The Promise of Technology to Confront Dilemmas in Teacher Education: The Use of WebQuests in Problem-Based Methods Courses
Leigh K. Smith, Roni Jo Draper, and Brenda L. Sabey

99

Lessons Learned from Implementing Technology In an Undergraduate Elementary Education Program
Shelley B. Wepner, Kathleen A. Bowes, and Rita Serotkin

111