IN SOCIAL EDUCATION

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Readings for Diversity and Social Justice

An Anthology on Racism, Sexism, Anti-Semitism, Heterosexism, Classism, and Ableism
Edited by Maurianne Adams, Warren J. Blumenfeld, Rosie Castaneda, Heather W. Hackman, and Ximena Zuniga

Readings for Diversity is the first reader to cover the scope of oppressions in America today by going beyond the usual race, class and gender triad to provide a more comprehensive approach to diversity and social justice. Includes essays from leading scholars, such as: Patricia Hill Collins, Cornel West, bell hooks, Joe R. Feagin, Michael Omi, Michelle Fine, and Iris Marion Young. Also look for its companion volume, Teachings for Diversity and Social Justice.

Democratic Social Education

Social Studies for Social Change
Edited by David Hursh and Wayne Ross

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Changing Teachers Work, the State, and Globalization
Susan Robertson

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Changing Negative Attitudes Toward Classmates with Disabilities
Art Shapiro

This much-needed text stresses the importance of changing attitudes toward those with handicaps, and suggests practical application of ways to change the negative prejudices in the classroom.

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The Recolonization of the African Mind
Birgit Brock-Utne

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Democratizing Education and Educating Democratic Citizens addresses three key areas: the conceptualization of democracy and citizenship, reform efforts towards democratization in various societies, and education efforts to foster democratic citizens. Each original essay in the volume is written from a different historical and national perspective by an international panel of prominent comparative education scholars.
FROM THE EDITOR
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**Special Issue: Technology in Social Studies Education**

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*The Guest Editors wish to thank Aimee Fogelman, doctoral student in social studies education at the University of South Florida, for her assistance with this special issue.*
The digital revolution is transforming culture, communication, and commerce, but nowhere is faith in technology’s power more clearly demonstrated than in the classroom.

E-learning is about much more than just plugging in a classroom computer. Some advocates predict that computers and modems will replace pencils and books and others believe that brick-and-mortar schools (and all but elite universities) will soon be obsolete. In a recent article for Education Week, Peter J. Stokes, vice president of Eduventures.com, a market-research company in Boston, describes e-learning as,

becoming literate [in] new mechanisms for communication: computer networks, multimedia, content portals, search engines, electronic libraries, distance learning, and web-enabled classrooms. E-Learning is characterized by speed, technological transformation, and mediated human interactions. (p. 56)

Like many other technology advocates, Stokes believes e-learning will revolutionize the traditional classroom by augmenting textbooks with online resources; making lectures interactive and multimedia based; and extending discussions beyond the classroom walls via new communication platforms.

Education beyond the classroom is also being transformed, with web-based tutoring; parental access to real-time student evaluation systems (rather than report cards); and student access to coursework from multiple locations. Advocates argue that e-learning represents a powerful convergence of technological opportunity and economic necessity, which makes it the basis of intimate contact between schools and private, entrepreneurial businesses, such as the technology companies whose hardware and software make e-learning possible.

The conventional wisdom in educational policy circles has been that children need to be introduced to computers early and that technology should be a strong presence in their school lives. In 1994, when the Clinton administration promised to connect every school to the internet, only 1 in 3 schools and just 3% of classrooms were wired. By last year, according to the National Center for Educational Statistics,
95% of schools and 63% of all classrooms had internet access—a project that has cost $100 billion according to some estimates. Fourth-graders are now building their own web sites; a suburban Chicago school district has purchased palm pilots for all their high school students; virtual high schools have been in operation for years; and in Pennsylvania there is currently a proposal for a cyber-school that would enroll children as young as 5 years old.

The rationale most often proffered for e-learning is that it can more effectively develop knowledge workers with high-tech skills who are necessary to sustain the growth of the “new economy.” Recent polls indicate that most Americans believe PCs and the internet are benign or beneficial. They certainly aren’t afraid of technology and seem to believe the conventional wisdom that early exposure to technology is a good thing. For example, Americans spent $424 million dollars last year on CD-ROMs for their children; and a recent Kaiser Family Foundation study showed that on a typical day, 26% of 2- to 7-year-olds spent time on the computer, averaging 40 minutes. The public, however, is somewhat conflicted about the impact of technology as they also blame it for accelerating already-frantic lifestyles or creating more problems than it solves (Piller, 2000). This was evident at the Wired Culture Forum, held in Toronto this past spring, when over 400 high school students raised serious questions about the rate at which technology is taking over their lives—their growing dependence on machines, the isolating nature of the internet, and how technology threatens their privacy and ability to relate to others (Azam, 2000).

A growing number of technology skeptics argue that the digital revolution has produced a variety of deleterious effects, such as disconnecting people from nature, their communities, and one another. The generally laissez faire approach to technology adoption in education and other parts of our culture has produced a disturbing lack of critical thinking about technology’s impact. Critics point to the fact that warning messages of environmental and child-advocacy groups about the negative impact of the automobile and television were largely ignored for decades. Richard Scolve of the Loka Institute—an organization devoted to increasing public involvement in technology decisions—told the Christian Science Monitor that the public’s lack of questioning about technology is similar to the early euphoria over the automobile. “The benefits are personally experienced while the downside is more diffused,” says Scolve (Van Slambrouck, p.2). It took decades before people started to balance the advantages of individual mobility and convenience provided by cars, with the collective impact of smog and unsustainable development patterns.
E-learning and Children: A Harmful Mix?

The most remarkable fact about the rise of e-learning in K-12 and higher education, however, is the speculative nature of the effort. There is little or no evidence to support the beneficial claims of proponents of e-learning for children. A new report by the Alliance for Childhood argues that the use of computers in education have had no proven positive effects on children, and may even be physically, intellectually, and socially harmful, especially for kids under the age of 11. The report, "Fool's Gold: A Critical Look at Computers and Childhood," grew out of the founding gathering of the US branch of the Alliance for Childhood—an international effort of educators, physicians, and others concerned about the plight of children today and who believe that by working together in broad-based partnerships of individuals and organizations the lives of children can be improved. The Alliance argues that the benefits of computers for preschool and elementary students are vastly overstated and the costs—in terms of money spent, loss of creative, hands-on educational opportunities, and damage to children’s emotional health—are not accurately reported.

Do computers really motivate children to learn faster and better? The "Fool’s Gold" report claims that 30 years of research on educational technology has produced just one clear link between computers and children’s learning: “Drill-and-practice programs appear to improve test scores modestly—though not as much or as cheaply as one-on-one tutoring—on some standardized tests in narrow skill areas” (Alliance for Childhood, p. 1). Furthermore, Larry Cuban, a Stanford University education professor and former president of the American Educational Research Association, is quoted in the report that “there is no clear, commanding body of evidence that students’ sustained use of multimedia machines, the Internet, word processing, spreadsheets, and other popular applications has any impact on academic achievement” (p. 2). When it comes to intellectual growth, the Alliance for Childhood argues that what is good for adults and older students is often inappropriate for youngsters. Rather than relying on information technologies, for example, face-to-face conversation with more competent language users is the one constant in studies of how children become expert speakers, listeners, and writers. Cuban (2000) describes the strong support of technology advocates and educational policy makers for investment in “hard” (e.g., wiring and machines) and “soft” (e.g., technical support and professional development) infrastructure for schools in the face of so little evidence as “irrational exuberance.”

Moreover, while the Alliance acknowledges that for children with certain disabilities, technology offers clear benefits, but for the majority of children computers pose (or contribute to) health hazards and
serious developmental problems, such as repetitive stress injuries, eyestrain, obesity, and social isolation. More generally the rapid technology changes of our era have accelerated our daily lives and caused the development of what James Gleick—in his book *Faster: The Acceleration of Just About Everything*—calls “hurry-sickness.”

**Must five-year-olds be trained on computers today to get the high-paying jobs of tomorrow?** A major part of the argument for placing computers in classrooms has essentially been a vocational one: students need to learn computer skills needed in the modern workplace. The need for “technological literacy” has become a myth that masks the fact that it is credentials, like a college degree, not computer-related skills that one needs to get a high-paying job in today’s economy. Technology critics argue the focus of education should be on developing morally responsible citizens and helping children, especially those who are labeled “at risk,” gain the necessary skills and knowledge to earn those highly important credentials (Cuban, 2000). The emphasis on technology is diverting us from the urgent social and educational needs of low-income children. As Massachusetts Institute of Technology professor Sherry Turkle, a clinical psychologist and author of *The Second Self: Computers and the Human Spirit* has asked: “Are we using computer technology not because it teaches best but because we have lost the political will to fund education adequately?” (Alliance for Childhood, p. 1). There is strong evidence that major investments in areas such as expanded preschool and adult literacy education, reducing class size, and ensuring that teachers are qualified and well-paid help children to avoid academic failure and produces more high-school graduates who pursue higher education.

**Do computers really “connect” children to the world?** The Alliance for Childhood claims that what computers actually connect children to are trivial games, inappropriate adult content, and aggressive advertising. The “distance” education technology promotes is the opposite of what all children need—close relationships with caring adults. The Fool’s Gold report states,

Research shows that strengthening bonds between teachers, students, and families is powerful remedy for troubled students and struggling schools. Overemphasizing technology can weaken those bonds. The National Science Board reported in 1998 that prolonged exposure to computing environments may create “individuals incapable of dealing with the messiness of reality, the needs of community building, and the demands of personal commitments.” (Alliance for Childhood, p. 2)
The bottom-line for the Alliance for Childhood is that rather than placing our faith in technology to solve the problems of education, we should look more deeply into the needs of children. Few would disagree with their conclusion that “the renewal of education requires personal attention to students from good teachers and active parents, strongly supported by their communities” (p. 3). We have yet to see the development of K-12 educational policy that attends to the full range of children’s real world, low-tech needs.

The Academic-Industrial Complex

The impact of e-learning on higher education has been even more dramatic than in elementary and secondary schools. The US Department of Education recently reported that 1.4 million students were enrolled in distance learning programs in 1997-1998, taking nearly 50,000 courses from accredited two- and four-year colleges and universities. The same report found that 44% of all higher education institutions offered distance learning in 1998, up from 33% just three years earlier. Many universities have complete undergraduate and graduate degrees online and Concord University School of Law, a division of the test prep company Kaplan, Inc., offers an all-online law degree. This spring Michael Saylor, C.E.O. of the high-tech firm MicroStrategy, announced he is spending $100 million dollars to create a free, online university offering “Ivy League quality” courses (Weiss, 2000). InterEd, an Arizona based research company, estimates that there will be 3 million students taking online college courses this year.

Richard Katz, the author of Dancing With the Devil: Information Technology and the New Competition in Higher Education, touts the importance of technological and financial collaborations between educational institutions and private, for-profit businesses. As traditional revenue sources for US higher education dry up, colleges and universities are faced with a limited set of choices according to Katz: cutting costs (with or without cutting quality), raising prices, exiting existing markets, pursuing new markets, creating new products, or pursuing a combination of these strategies.

Mark Taylor, a professor of humanities at Williams College in Massachusetts, argues that the one choice higher education does not have is whether or not to collaborate with corporations in offering higher education in the 21st century. Taylor agrees with J. Paul Getty’s grandson, Mark Getty—who recently succeeded, via 14 acquisitions in five years, in creating the world’s largest commercial photograph library—that “intellectual property is the oil of the 21st century” (Face value, 2000). Indeed, as Getty points out, the world’s richest entrepreneurs all made their money in intellectual property. This circumstance,
according to Taylor, means that universities can choose to join with education entrepreneurs and win big or compete with them and lose big.

What the business world understands and the academic world is reluctant to admit is that education is a very valuable commodity. In network culture, profits are going to be generated not only by selling things on-line but, more important [sic], by marketing commodities that are distributable through new technologies...[E]ntrepreneurs are taking aim at education. (Taylor, p. 40)

In a recent Atlantic Monthly cover story Eyal Press and Jennifer Washburn sounded an alarm about what they call “the academic-industrial complex” and “the market-model university.” They argue that commercially sponsored research is putting disinterested research at risk. Traditionally universities regarded proprietary claims as fundamentally at odds with their obligation to disseminate knowledge as broadly as possible, however, today nearly every research university in the US has a technology-licensing office. Press and Washburn conclude their article with a warning, made in 1952, by historian Richard Hofstadter:

It has been the fate of American higher education to develop in a pre-eminently businesslike culture...Education is justified apologetically as a useful instrument in attaining other ends: it is good for business or professional careers...Rarely, however, does anyone presume to say that is it good for man [sic]...The best reason for supporting the college and the university lies not in the services they can perform, vital though such services may be, but in the values they represent. The ultimate criterion of the place of higher learning in America will be the extent to which it is esteemed not as a necessary instrument of external ends, but as an end in itself. (quoted in Press & Washburn, p. 54)

Taylor dismisses Hofstadter’s declaration as well as other calls to protect disinterested investigation, academic freedom, and tenure from profit motivations, as so much sanctimonious self-interest.

In addition to licensing products and technologies produced by university researchers, university managers have targeted distance education—the digital version of correspondence courses—as an area ripe for corporate collaboration and profit. Distance learning is coming on so fast that management guru Peter Drucker has predicted the
"university won't survive...the future is outside the campus, outside the traditional classroom" (Bray, 1999, p. 20). Following a well-established pattern in the history of education in North American, higher education is emulating the corporate trend toward distance education. The US has about 4,000 corporate "universities" and over 85% of Fortune 500 companies use remote training. HMO giant Kaiser Permanente offers postgraduate courses for nurses; Disney dispenses "ducktorate" and "mouseter" degrees that are widely respected in the leisure industry (Degroot, 2000).

Distance learning proponents argue that online learning is more convenient and flexible for students; that students receive speedier feedback on assignments and get more personal attention; students have more control over their learning experiences; that online learning enhances information technology skills and fosters new ways of constructing knowledge as well as that it is quicker and more efficient.

As for the quality of distance education, it varies widely. In some classes students merely read lecture notes and answer questions via email. Other classes are more elaborate, with interactive CDs, downloadable videos, chat rooms and regularly scheduled sessions. Distance education advocates, however, point to a report compiled by Thomas Russell (1999) and published by the Office of Instructional Telecommunications at North Carolina State University as evidence that distance learning is at least the equivalent of traditional education in terms of narrowly defined outcomes. Russell’s report, "The No Significant Difference Phenomenon," is described as a "comparative research annotated bibliography on technology for distance education" that examines the findings of 335 studies conducted between 1928 and 1996 on various forms of distance learning—correspondence courses, televised classes, and internet-based courses. Russell concludes that based on test scores and grades that there is little difference between traditional and distance learning.

Critics, on the other hand, argue that distance learning can never replace the classroom and the social experience that is a key part of university life. University of Washington historian and distance-learning critic Jim Gregory says "Students want to go to universities and they want to sit in real classes. Talk to any 19-year-old. Talk to anybody on any college campus and ask them if they’d rather be sitting at their kitchen table" (Bray, p. 20). A recent poll of State University of New York professors found that 68% do not believe that distance education courses offer the same quality as traditional ones, while more than 83% believe electronic courses should supplement—rather than replace—traditional courses (United University Professions, 2000). The conflict between distance education advocates and critics is at least in part based on contradictory conceptions of education. Is education
merely a form of information-transfer ("banking" as Paulo Freire labeled it) or is education fundamentally about a relationship between people? Can computer mediated interaction substitute for the human interaction/experience that is at the heart of learning?

David Noble, a professor at York University in Toronto and author of the 1998 article "Digital Diploma Mills," believes online higher education is being driven by profit, not educational, motives. Noble argues the trend towards distance learning in higher education as implemented in North American universities today is a battle between students and professors on one side, and university administrations and companies with "educational products" to sell on the other. It is not a progressive trend towards a new era at all, but a regressive trend, towards the rather old era of mass-production, standardization and purely commercial interests. (Noble, 1998, p. 1)

Noble sees online learning as an exact parallel to the correspondence courses of the 1890s, where the main challenge was how to turn a profit and there was no economic incentive to improve instruction. Elite universities like Columbia and the University of Chicago lent their names to correspondence programs promoted as a chance for the average person to get an elite education. The problem, according to Noble, was that even the better programs had to compete with cheaper fly-by-night operations and in an effort to cut costs, universities ended up paying readers—often graduate students—a piece rate to grade students' work. "The economics of correspondence learning was to put all your money into hype and promotion," according to Noble, "You get a high rate of sign up. Students pay tuition up front, and instructors are paid a piece rate" (Karaim, 1999). The result was that quality suffered, students (and then universities) got wise and abandoned correspondence learning.

Distance learning is a key element in the trend toward commercialization of education (which includes vouchers as well as charter schools and the for-profit educational management organizations running them). High-tech corporations are eager to partner with universities because they see a great undeveloped market in a $200 billion a year industry and desire the instant integrity that a university partnership can offer to their educational products. University managers fear being behind the curve in the latest fad and worry that commercial online universities will lure away a sizable portion of their student population. As a result, they are willing to follow Taylor's logic and sell their institutions' reputations in exchange for the resources to mount online programs. In addition to their eagerness to harness cor-
porate dollars, university managers also hold out hope that online programs will increase the number of students enrolled (e.g., increase revenue from tuition) and offer economies of scale that will allow them to run universities more cheaply.

In an effort to reduce "Ivory Tower overhead," managers are reconstructing the workforce in higher education by relying more heavily on part-time and contingent faculty as well as graduate students to teach. And, like investors in dotcom stocks, university managers are gambling millions on unproven distance learning technology instead of hiring tenure-track faculty. This speculative strategy has yet to yield profitable returns, educationally or financially, for universities and isn't likely to. Indeed, Terri Hedgaard-Bishop, vice president for distance learning at the for-profit University of Phoenix—the largest private university in the US, with 92 campuses and over 75,000 students—says there is nothing cheap about providing online education. Funding 24/7 technical support, revamping or building registration, enrollment, and payment systems for distance learning, not to mention the costs of producing and teaching online all figure into the picture. "The truth is," she says, "technology education frequently costs more [than traditional education]" (Bray, 2000, p. 20).

Distance learning promises (perhaps vainly) to give cash-strapped colleges the opportunity to peddle online versions of courses to new markets (and with fewer and/or less expensive faculty) and potentially even turn a profit—squeezing more surplus value from faculty, the intellectual and creative sources of courses. Online education also threatens to intensify the work of faculty and undercut academic freedom. Faculty work harder and longer for online courses than for traditional classes without increased compensation, while current tenure and promotion systems discount online teaching because faculty are generally skeptical of the value of such classes.

University managers are also using technology to deprive professors of their intellectual property rights by claiming copyright over their course material (Murray, 2000). When a professor prepares a class web page or an online course these are legally works for hire. This means, that they are the property of the university and the university can modify and distribute them as it sees fit, with or without the permission of the faculty member that created the page or course (McGuire, 2000). Professors are deskilled and students short-changed when online courses are constructed by faculty members for a flat fee and then administered by technicians and student work is graded by graduate students. The longest faculty strike in Canada, at York University in 1997, was in part over the university's plan to create internet-based courses with corporate sponsors paying $10,000 to affix their logo to the web pages. York faculty won a pledge from the university
that it would not implement new technology initiatives without faculty input.

The sheen of distance learning is perhaps tarnishing a bit, as a number of online education ventures are in trouble, including Western Governors' Virtual University—which was projected to have an initial enrollment of 5,000, but could only muster 75 inquiries and 10 students—and the partnership between UCLA and Onlinelearning.net, which is losing money and unable to pay promised royalties (Murray, 2000). Noble counters Drucker's bold prediction of the demise of the university with one of his own: that distance education will go the way of old-fashion correspondence courses in the next few years.

Conclusion

It is more than likely that neither Drucker nor Noble is entirely right. Just as it does for culture, commerce, and communication, the digital revolution harbors great changes, both good and ill, for education. We cannot, however, expect that a laissez faire approach to technology adoption in education will necessarily produce positive educational experiences. Instead we must be critically aware of the potential downside of e-learning and demand wise use of technology for the collective good. Clearly the potential benefits of e-learning for learners and teachers are great, but what are the trade-offs? How do we employ technology for appropriate educational ends, as opposed to quick-fix pedagogical or budgetary ends? These are not merely technical questions, but questions that should compel us to consider what role we want for technology in our lives and what might be missing in our schools and communities in a machine-dominated age. As learning technologies become more sophisticated so too must our critical assessments of their impact on our lives.

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Introduction

The advancement in computer and information systems educational applications over the past two decades has dramatically changed the way we now conceptualize teaching and learning structures. From the word processor to the Internet, students and teachers have been prompted to take advantage of new technological tools and use them in differential learning environments as rapidly as they have been brought to the market place. The introduction of these technologies into classrooms has allowed for a new, atypical reorganization in the way teachers can instruct their classes and students can learn. However, despite these possibilities, studies note that traditional teacher-centered instructional paradigms have not appreciably changed in the last twenty years, and most educators, including social studies instructors, have not made effective use of at-hand computer technologies (Martorella, 1997).

In a comprehensive look at the use and effectiveness of technology and the social studies Berson (1996) notes that “computers (in social studies classrooms) have served the primary function of facilitating students’ access to content and have been relegated to being an appendage to traditional classroom materials” (p. 495). Shaver (1999) also relates that technology itself will not likely be a basis for instructional reform in the social studies. He cites the need for “thoughtful curriculum development, and careful instructional design based on the thorough and on-going explication of assumptions about society, learners and learning as these are as critical to the productive use of technology as to any other teaching mode” (p. 27).

These studies, similar to others that have looked at the effects of media on learning, (Clark, 1994, Fabos and Young, 1999), reinforce the notion that if technology is to effectively impact the classroom it must be related to the overall intent of instruction. In doing so, technology becomes tied to both content and process skills as it is sublimated
within broad learning goals. Here technology becomes part of the general purpose of an instructional system and gives direction for a variety of activities within it.

The promise of technology is not so much its cutting-edge advances as its innovative and imaginative applications. As technology becomes more affordable and ostensibly easier to use, it is the creative application to novel situations that sparks imaginative people to develop new approaches to problems. While this has happened throughout our culture it seems to be lagging in both application and use in most educational venues and especially those within social studies classrooms (Pahl, 1996).

In meeting this moment we know that delivering the technology, the hardware and the software, to teachers is the easy part; it is getting them introduced, comfortable and proficient with it that requires time and effort. Once they are at ease with it, they may make the linkages between technology and teaching, adopt as their own new ways of training with technology, and perhaps change their perspective on instruction and learning.

The Classroom, Training, Support and Preparation

There is evidence that social studies teachers are beginning to use technology as part of the learning process. For example, social studies teachers have found technology valuable in problem-based co-operative activities because it requires the selection, sequencing, and posing of problems that result in successful products (Eastmond & Gibbons, 1998). The use of problem-based product oriented learning in social studies classes has been seen as especially effective when supported by educational technology applications (Stites, 1999).

Yet, while social studies teachers may have begun to encourage cooperative use of technology for their students, teacher use of computers is still relatively infrequent. Fewer than two of every 10 teachers are serious users of computers in their classrooms. Three to four are occasional users. The rest, four to five of every 10 teachers, never use the machines. The main reason for this is lack of technical support and training for teachers (Cuban, 1999). Coupled with the lack of support is the reality that most teachers who use computer technologies with their classes have little time to plan effective integration of technology with their ongoing teaching activities (Becker, 1998).

The integration of technology with at-hand instruction is a matter of assessing technology applications in the classroom that go beyond recognizing the appropriateness of pedagogy. Within this context it is also important to identify content deficits and how technology can meet these. Needs assessments of this type can help in locating problems that are worthy of training efforts and expenditures, as
well as helping decision makers allocate limited instructional resources for maximum benefit (Tessmer, McCann, & Ludvigsen, 1999).

Technical support also plays a critical role in teachers using technology. This process is defined as overt assistance in user trouble-shooting and maintenance and repair. It is problem-focused intervention designed to identify the obvious cause of the trouble and help a user complete the task at hand. It often focuses on software and hand-holding for nervous users. Maintenance and repair focus on fixing root causes to build longer-term equipment fitness for duty. It is usually not done in real-time and is independent of the task at hand.

Technical support is important for two reasons: (a) teachers who are supported are less likely to feel threatened and develop more positive attitudes toward using technology; and (b) teachers who are supported are more likely to become proficient users of technology in the classroom (Lucas, 1995).

It should be noted that while all of the previously stated concepts are necessary ingredients to successfully using technology, numerous authors have also written that the stunted implementation of technology in schools has its roots in teacher preparation programs. The preparation of teachers, including those preparing for social studies classrooms, in technology education has been the focus of two major reports (NCATE, 1997; President’s Committee, 1997), special editions of Education Week (“Technology Counts,” 1998 and 1999), and special sections of the Wall Street Journal (“Technology,” 1998 and 1999). These publications all acknowledge that although many schools and universities have received considerable amounts of hardware and software support, they have not successfully integrated technology into their teacher preparation programs or used it to anywhere near its full capacity in overall university instruction. For example, most United States teachers (K-12) have not had enough training to employ technology in their teaching. In fact, only 15 percent report having at least nine hours of preparation in the area as part of their teacher education programs (Educational Testing Service, 1997).

A major factor in this deficit lies in the fact that over the past twenty years, as educational institutions have employed technology to improve teaching and student performance, the major emphasis has been on obtaining hardware. Only recently has there been recognition that training in appropriate use of technology and its applications to the curriculum are important if technology is to be successfully integrated into education.

An understanding of training, support, and the technical use of hardware and software, as well as their applications, can enable technology-based interactive, collaborative, cooperative, authentic, and active learning to develop. These are all instructional skills (NCSS, 1994) that need to be implemented throughout social studies educa-
tion, at all levels. While there are a variety of scenarios as to how to capture these issues in a classroom context, one possibility of how this process might unfold is through web-based learning environments. These lend themselves well to the incorporation of technology in the social studies teaching and learning process.

Training for Technology:
A Web Based Scenario That Might Make A Difference

As a conglomeration of a number of network tools within an integrated software package with a common user interface, web-based learning environments provide incredibly fertile ground for the development of creative learning experiences. These structures greatly streamline systems and class administration of software tools for technical staff and, more importantly, for the faculty who use them in the classroom. Whole classes can be uploaded at once to a server setting up individual accounts for the students to provide some security and privacy. These accounts are then stored in an electronic class roster that can be set up as an electronic grade book for the instructor and a private means for students, and the instructor, to monitor progress in the course. For interaction between faculty and one-to-one or one-to-many interaction, electronic bulletin boards, or news groups, take many forms. They may include “anytime- anywhere” office hours or group discussion with the class as a whole or multiple group discussions.

There is a wealth of pedagogical possibilities that discussion can encompass, such as, collaborative work among students and active construction of knowledge based upon problem solving, writing reflectively on what they have learned, relating to past knowledge and applying it to others; all important social studies skills. For synchronous, “live” interaction, “chat rooms” are available along with “white board” capabilities for illustrating a point of discussion. On-line quizzes can be set up that may be particularly useful for self-assessment and, if constructed properly, can provide interactive guidance and feedback to the learner. On-line tests may also be set up. The results of both the quizzes and the on-line test may be automatically graded and recorded in the on-line grade book and linked together.

Web-based learning structures also provide a simple way of interacting with the web server for uploading, updating and storing pages. Web pages with text, graphics, hypertext, multimedia, audio, video, animation, and more offer a myriad of pedagogical possibilities. Some web learning environments offer simple ways of searching and indexing pages or of setting up hypertext glossaries to provide a foundation for learners so that they may also engage in more higher level learning activities. Students may also collaboratively build web
pages and easily store them on the server as class projects which, properly designed and with the ever increasing resources of the Internet, may be authentic to the subject matter at hand. Interactive web pages can provide simulations and modeling of phenomena already available on-line. Each of these can have a direct impact on the development of research skills in history or government classes for example.

Training for these needs to be in the form of intense small-group, workshops for faculty. To start, instructors need to be trained in the technical aspects of how to use the technology as well as how the technology may be used to reform teaching and learning practices to be more interactive, cooperative/collaborative, authentic and active. The training may involve development of projects, such as the implementation of a technology for meeting a specific learning objective in one of the courses to be developed as technology models. It should include presentation of the project and ongoing discussion regarding the project via on-line bulletin boards for peer analysis. All of these experiences can be transferred directly to a social studies classroom.

To assist faculty in actual class applications, support also needs to be provided in the form of direct technical assistance. Assistance with web page and multimedia development to the faculty as part of utilizing and modeling the appropriate use of technology in class should be part of a technology development and implementation team.

While broad-based training efforts such as the ones discussed are important, so too is the revision of courses. This allows technology to be applied in a cross-section of social studies subjects and delivered in a variety of technology modes. Instead of concentrating on technology utilization in any one class, this model calls for technology demonstrations in a multitude of settings and courses. In this way teachers will, hopefully, understand how technology might be used, applied, and integrated throughout the social studies curriculum.

**Examining the Effects**

While the experiences described above offer some exemplars towards the development of technology training experiences for social studies teachers, studies that can substantiate the positive effects of technology in social studies classes as an instructional component are limited. For example, as early as 1991 Ehman and Glenn noted that drill and practice software had only modest impact on student learning. In Berson’s (1996) review of the technology and social studies literature he stated that there was a “paucity of empirical evidence and most conclusions (about the effects of technology) are impressionistic.” He went on to say “there is not satisfactory evidence on which to base decisions to integrate computers into social studies instruction.”
This view is reinforced by Clark (1994), whose review of media research led him to state that there was no proof that media causes learning under any conditions. Clark's study also concludes that the difference in student achievement in technologically rich classrooms is related to the teacher and how he or she applies these resources to their students' learning needs.

To be sure there is some data that indicates technology does have an impact in social studies classes. Areas such as problem solving skills (Ehman, Glenn, Johnson, & White, 1992), critical thinking (Markowitz & Crane, 1993), web-based instruction (Fontana, 1997), and the use of telecommunications to develop multicultural awareness (Fabos & Young, 1999) have all provided some basis for viewing the use of technology in social studies instruction as a positive attribute. However, in order to make substantive generalizations about the effect that technology has on social studies learning, researchers need to go beyond these singular social studies constructs. They must begin to describe the holistic effects of technology on the social studies if technology is to be taken seriously as an important tool in social studies education.

The types of studies within this rubric should include qualitative designs that look at student participation; academic engagement; curriculum implementation; technology integration; instructional procedures and specific classroom dynamics, as well as focus group interviews. The purpose of these would be to ascertain perceptions on how technology affects course instruction and learning.

In addition, quantitative studies that use instruments to assess the degrees of technology implementation, as well as student performance that looks at both content and process skill development, also need to be undertaken. These designs should also utilize a quantitative/qualitative case study design involving participating instructors and students to determine the classroom effect of technology interventions.

If these projects are to have a serious effect on social studies instruction they must also act as feedback mechanisms to correct either the learner and/or the system toward defined goals. This might enable us to make rational instructional decisions.

These discussions about research are important and have taken on a degree of immediacy. At the intersection where the school meets the society is a specter which is bringing haunting visions of the world to come. Society, expressing weariness and a disillusionment with education and schools, is asking that the schools prove what they are claiming to do with technology before giving a support which was heretofore almost automatic.
Summary and Conclusions

As with other segments of the educational community, social studies educators have been participants in the "education expectation revolution" brought on by the development of new technology during the last twenty years. We have come to expect Internet access in classrooms and the use of e-mail as a necessity rather than an experiment in telecommunications. We share our experiences with technology in an almost messianic manner as evidenced by the three most recent National Council for the Social Studies (NCSS) Annual Meetings (1997-1999) that had 149 sessions or pre-conference workshops that focused on technology. Technology and social studies have become a subset of research agendas for many, with projects and grants from federal and state sources spurring us on.

The title of this article poses a question: Can It Make A Difference? In fact, technology has already changed the way we look at schools and the ways we deliver instruction. This issue of Theory and Research in Social Education presents an exploration into the depth and magnitude of these alternative views and the pedagogical, content and social issues that have begun to emerge.

In her article "Using Electronic Technologies to Promote Equity and Cultural Diversity" Merry Merryfield relates the paradoxes in using technology to increase an understanding of diversity and social justice. Cheryl Mason and Michael Berson go a step further as they examine the use of computer mediated communication in a preservice social studies methods course in "Computer Mediated Communication in Social Studies Methods: An Examination of Students' Perceptions and Perspectives." Switching from a pedagogical perspective to a look at the effective use of technology in a content area, Natalie Milman and Walter Heinecke cast a critical eye in "Innovative Integration of Technology in an Undergraduate History Course." Timothy Keiper, Angela Harwood, and Bruce Larson add to this analytic perspective focusing on technology as they present findings from a study that discusses teacher attitudes toward using technology as an instructional tool in "Preservice Teachers' Perceptions of Infusing Computer Technology Into Social Studies Instruction."

As part of this issue of TRSE, Neil Postman of New York University was asked to present a critical analysis of technology and its effects on schools and society. He has done this through a historical, economic and sociological perspective that raises serious questions focusing on the use of technology and the overall purpose of schooling in a democracy such as ours.

To conclude this issue, Kara Dawson, Glen Bull, and Colleen Swain have prepared an essay review of E.M. Rogers (1995) work Diffusion of Innovation. The authors tie together both the notion of tech-
nological use for the sake of personal goals and those of society at large.

Each of the articles, essays and reviews are but an opening gambit into a look at how technology can effect the pedagogical, content, and attitudinal constructs that underpin the social studies. Within each manuscript attention to training and application issues that incorporate social studies concepts, the need for long range in-depth studies centering on social studies and curricular and learning precepts are noted. This takes on importance if we are to truly validate the types of instructional changes the introduction of technology in classrooms may bring about.

However, these discussions merely begin to skim the surface of research possibilities that are needed to provide a depth of knowledge about technology within the social studies. Until longitudinal, in-depth studies incorporating technological and social studies instructional precepts are conducted, technology will only be given a brief nod of acceptance as something that is nice to think about but not a necessity within the social studies community.

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Using Electronic Technologies to Promote Equity and Cultural Diversity in Social Studies and Global Education

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Abstract
As new electronic technologies are infused into social studies teacher education, there is the potential of their application to goals of equity, diversity, and cross-cultural understanding. This article focuses on the use of one electronic pedagogy, threaded discussion, and its application within graduate courses in social studies and global education. Used in conjunction with conventional face to face alternatives, threaded discussions can add to the development of a culturally diverse learning community, deepen meaningful discussion of controversial and sensitive issues such as prejudice, privilege, and discrimination and increase educational equity by changing patterns of dominance and interaction.

One of the most critical failures of social studies teacher educators in the late twentieth century has been our inability to prepare teachers who teach for educational equity, cultural diversity, and global interconnectedness. Some of those concerned with this failure have looked at the demographics, lived experiences and worldviews of teachers and teacher educators, while others have studied specific content, theories, pedagogies, instructional resources and field or cross-cultural experiences in the making of multicultural and global educators (Banks, 1995; Banks & Banks, 1995; Cushner, 1989; Dillard, 1996; Goodwin, 1994; Ladson-Billings, 1994a, 1994b; Lynch, 1989; McCarthy, 1990; Merryfield, 1998; Powell, Zehm, & Garcia, 1996; Sleeter, 1992, 1993, 1995; Wilson, 1982, 1983, 1993b; Zeichner, 1995). Although there have been some linkages made between other social studies reforms and goals of equity, diversity, and interconnectedness (for example, see Shinew’s 1998 feminist examination of citizenship education), there is a notable absence of scholarship on the application of electronic technologies to goals in multicultural and global education.
In this article I discuss one web-based strategy—threaded discussion—that I have found quite promising in promoting educational equity and increasing teachers’ learning in multicultural and global perspectives. I am focusing on threaded discussion because this technology has brought about new facets of equity and intercultural learning that are quite different from what I am able to accomplish in the same courses, whether online or face to face, without threaded discussion. I first set the stage for the reader’s understanding of my use of web-based pedagogy by outlining some contextual factors in my teaching. Second I draw from two years of online work in social studies and global education to illustrate three uses of threaded discussion and discuss some of the intended and unintended outcomes of this electronic pedagogy. Finally I raise questions about use of electronic technologies for multicultural and global education within the field of social studies teacher education.

**Contextual Factors**

My teaching is grounded within the contexts of the people with whom I work and teach, my lived experiences, and the theoretical constructions of my subject matter and educational goals. I am presently in my twelfth year of teaching preservice teachers, practicing teachers, and full time graduate students in Ohio State’s Masters in Education (MEd), Masters of Arts (MA) and PhD programs in social studies and global education. I am especially interested in how equity pedagogy and cross-cultural experiential learning can influence how teachers think and teach about the world and its peoples. Scholarship on intercultural education (Bennett, 1993; Brislin, 1986, 1993; Cole & Scribner, 1974; Dasen, 1992; Hall, 1976; Paige, 1993), especially work in cross-cultural experiential education (Brislin, Cushner, Cherrie & Yong, 1986; Cushner, McClelland & Safford, 1992; Gochenour, 1993; Stachowski & Mahan, 1998; Wilson, 1982, 1983, 1993a), informs my teaching and research as do my own experiences of growing up in a racist community in Appalachia, teaching in Atlanta during desegregation, and living and working in six African countries over many years. In my social studies courses in global education, African Studies, and multicultural education, I use cross-cultural collaboration to build positive interdependence (see Allport, 1954; Johnson & Johnson, 1992; Slavin, 1992) among teachers, yet I also agree with Deborah Britzman (1994) that experiences cannot be essentialized as some sort of prescription for cultural understanding since the meaning we make of our experiences comes through the lens of our identity and the contexts of power and privilege in our lives.

Reflective practice is a part of all my courses since I see it as a major part of the process of teachers’ examination of their knowledge
construction and their openness to multiple perspectives (Cole & Knowles, 1995; Carter & Doyle, 1996; Dillard, 1996; Gomez, 1996; McCall, 1995; Schubert & Ayers, 1992). In developing teacher education for diversity and equity, my decisions have been influenced considerably by the scholarly work of Christine Sleeter (1992, 1993, 1995, Larkin & Sleeter, 1995), Gloria Ladson-Billings (1994a), and Ken Zeichner (1995; Zeichner & Hoefe, 1996; Zeichner & Melnick, 1995; Zeichner et al., 1998). To bridge multicultural and global education, my pedagogy asks teachers to build skills in perspectives consciousness, analyze multiple realities, practice conflict management and develop cultural competence (Alger & Harf, 1986; Anderson, 1990; Anderson, Nicklas & Crawford, 1994; Becker, 1990; Case, 1993; Hanvey, 1975; Merryfield & Remy, 1995; Wilson, 1993a). I find some work in post-colonial theory and African Studies relevant to my conceptualization of effective social studies and global education as it provides insights from points of view and people who are practically invisible in American education. Theories such as orientalism (Said, 1978, 1993) help teachers examine colonial and racist assumptions of knowledge production and consider how the global realities of center and periphery are connected to their community and nation. In getting teachers to reflect upon the nexus of their personal identity, lived experience, and local/global contexts of power and privilege, I draw from the ideas of double consciousness (DuBois, 1989; Gilroy, 1993) and decolonizing the mind (Ngugi, 1986, 1993). I integrate first person narratives, oral history, children’s and adult literature within sustained cross-cultural experiences to develop skills in perspective taking and cross-cultural communication across multiple contexts of diversity, privilege, inequity, and injustice.

Since sustained cross-cultural interaction is a pedagogy upon which I build my courses, I want culturally diverse classes. Although our program and school actively recruit students of color, most classes in Ohio State’s College of Education end up with a majority of the students being white middle class teachers. To ensure my classes have a substantial number of people of color from the U.S. and other countries, I work with the Department of African American and African Studies in a dual degree MA program, and I go after funded projects so that I can pay honoraria to “cultural consultants.” Cultural consultants are Americans of color and people from other countries residing in the Columbus community whom I pay to work with my seminars and summer institutes as resource people who, through cross-cultural interaction in class and out-of-class assignments, infuse their cultural knowledge, experiences and perspectives into every facet of the teachers’ learning (see Tyson, Benton, Christensen, Gollah & Traore, 1997, for insights into five teachers’ learning experiences through this cross-cultural pedagogy). Through these efforts all my MA and PhD
classes have diversity in race, ethnicity, national origin, language, religion, and worldviews.

My use of online technologies developed as part of my long term search for ways to increase teachers' learning from and interaction with people different from themselves, their experiential understanding of equity, privilege, and outsider status, and their active decolonizing of their knowledge of the world and its peoples. As electronic mail and searches on the Internet became a part of my life in the 1990s, I began to consider ways these new technologies could address my educational goals. I have no background in technology and started slowly by integrating a few websites into my courses in 1993, and then listservs and electronic assignments into our team-taught Professional Development School methods courses and student teaching in 1994 before taking on more extensive web-based pedagogy and teleconferences. In 1998 my use of electronic technologies was accelerated when I was selected as one of the first three Ohio State University professors to teach a course totally online. With funding for release time to plan and four teaching assistants for technical support, I transformed a required MA course, T&L 881 Multicultural Education, for asynchronous learning and taught it to a totally online community of 50 educators from nine countries. During the online course I experimented with a number of electronic pedagogies and studied the transformation of the teachers' thinking and academic work as they reconceptualized conventional graduate education through their first experiences in asynchronous online learning with no face to face interaction with either classmates or their instructor.

By the time the course was over I had evidence that electronic pedagogy can be a powerful tool in addressing some of my goals in social studies and global education. In the two years since then, I have integrated online technologies into the campus version of T&L 881, two other MA courses (T&L 878 Infusing Global Perspectives in Education and T&L 807 Teaching About Africans and African Perspectives) and three MEd courses (T&L 638 and 639, our two preservice social studies methods courses and T&L 925.28, our MEd capstone seminar). I have given considerable attention to examining how individual strategies and resources (for example, the use of listservs, web searches and websites, CD ROMs, online journals, chat rooms, assignments turned in electronically and emailed back to students, streaming video, teleconferences, electronic portfolios, threaded discussion, etc.) can enrich or extend learning in ways that go beyond what I am able to bring about without them. Given the inequitable access to computers and the Internet across teachers and schools in the U.S. and globally, I am very aware that requiring the use of these technologies favors those teachers who have the money and motivation for home computers or those who teach in a district that can afford to fund
Internet access in its schools. I learned early on that teachers will only work on electronic assignments in an OSU computer lab as a last resort. Although I have experimented with the use of a number of electronic pedagogies, I only continue to use those that I find add new dimensions to learning beyond what I am able to accomplish without them.

In this paper I focus on threaded discussion as I believe it to be one of the most promising electronic technologies for teacher education in social studies and global education. Over the last two years I have compared the content and interaction patterns of threaded discussions with face to face discussions in regular classroom seminars in order to analyze the strengths and weaknesses of each approach and how they can complement each other. I’ve found some topics, especially sensitive and controversial ones, are much more productive in online discussions while others are more appropriate when teachers are face to face. The differences are so striking at times that even some people who have never used a computer before identify differences in their learning by the time they have experienced two or three threaded discussions. In a recent global education seminar, some of the teachers not only recognized and contrasted the power of these two venues by the fifth week of classes, a few talked among themselves about the differences and began to advise me when they thought an upcoming topic would be better discussed online or face to face. As with many electronic pedagogies, threaded discussion serves to decenter the instructor’s authority and democratize discourse (see also Warschauer, 1999).

**Teaching Through Threaded Discussion**

Threaded discussion is one way that my students interact online instead of face to face. I have also experimented with chat rooms, news groups, and listservs, but I find in comparing the results that threaded discussion has numerous advantages because it takes place on a course homepage (a homepage for every course) where I can set up the structure and delete errors, makes interaction among large numbers of people possible (I’ve had up to 54 teachers interacting at a time) and provides a searchable database of student work and student interaction. I might note here that depending upon how it can benefit the course content and goals, I use threaded discussion from two to five times during a ten-week quarter course. My university requires that we use FrontPage for our web-based work, so all experiences and excerpts in this paper are within the contexts of threaded discussion through FrontPage.

Here is how my threaded discussions work. I have homepages for all my courses (click on [www.coe.ohio-state.edu/mmerryfield/](http://www.coe.ohio-state.edu/mmerryfield/) and
then click on courses to see these). For either full class or small group discussions, the teachers go into the course homepage and click on Course Discussion and then choose which discussion (Discussion One, Two, Three, etc.) to enter. They read through the assignment or questions to be addressed in the discussion and the messages already posted since the last time they joined the discussion and then either respond to someone else’s message or begin a new thread on another topic. The “threads” develop as an outline of message headings and grow longer and more complex as people post messages on new topics (a new thread) or respond to messages already posted. Threads can be very short with only one message or quite long with 10-15 messages (See Appendix A). After scrolling through the table of contents, the teachers chose a message to read by its title and author and click on it to pull up the entire message. (See Appendix B for some examples of messages in a single thread.)

Most of my threaded discussions run over several days with the students posting messages at least two separate days so that they can post a couple of messages, leave a day for others to read and react to their messages, post other messages and read responses to those messages. I assign the number of messages each person should post (usually four to six) and the time period for the discussion (usually four to five days). In a threaded discussion I am running this week in social studies methods, the preservice teachers are posting three messages that are their original lessons or unit plan ideas to demonstrate how they can apply the conceptual literature they have been reading on culturally relevant teaching and global education to instruction for the students they are currently teaching. Another three messages are required within four days that demonstrate their ability “to build an online learning community,” their skills in listening, questioning, supporting, critiquing and adding ideas to those threads begun by others. The preservice teachers, field professors (eight master teachers with whom I team-teach methods), other social studies teachers in our PDS Network schools, OSU professors, OSU supervisors and some graduates of our program contribute to maintaining a professional online community in much the same way we nurture face-to-face working relationships. In my classes, community building means using our listservs and course homepages to engage with others in exploring ideas and sharing experiences, showing support and encouragement for each other when we try new ideas and take risks, finding commonalities and shared goals, asking hard questions and challenging each other, and finding time to listen and learn.

Over my first two years of threaded discussions I have had rather consistent feedback from teachers as they assess the merit and worth of threaded discussion first as they are experiencing the posting and reading of messages and then when they look back upon the total
course experience. I’ve learned that whether or not I ask them to, the teachers will compare their experiences in threaded discussion with face to face discussions in large or small groups in campus classrooms and other assignments that the threaded discussions have replaced (for example, posting reviews of instructional materials instead of sharing them orally within a classroom setting). The findings outlined below are grounded in content analysis (Lincoln & Guba, 1985) of data from 222 teachers across eight different courses as they have engaged in threaded discussion and assessed its impact on their learning in doing course assignments and meeting course goals. As I discuss ways I have found threaded discussion strengthens my classes, I provide some illustrations of assignments and reactions from teachers. I also reflect upon some of the intended and unintended outcomes of this electronic pedagogy.

**Building a Culturally Diverse Learning Community**

A major goal across all my courses is the development of a course community where teachers learn from working with people different from themselves. In order to build community within a course, I begin by asking everyone to write and share short autobiographies that focus on their lived experience and knowledge construction related to the course content. For example, in my multicultural education class I ask the teachers to reflect upon their cultural identity and analyze significant interactions they have had in learning about inequities and human diversity. I pose questions: How have you come to understand your own culture? What have you learned when you have looked at your own culture through the eyes of someone quite different from yourself? What comes to mind when you think of what “other people” means in your family? What is it like when “your” people are considered outsiders? What has your formal education taught you about your own cultures, prejudice, human differences, privilege, and inequality? What do you most value from these learning experiences?

Before I began to use electronic technology, I initiated the community-building process with a two-hour activity in the first seminar in which the teachers worked in small groups to share their reflections upon how their parents, community, formal education, and other experiences have shaped their own cultural identity and the ways in which they learned about people different from themselves. I began the class by modeling a process of thinking back over one’s life through the metaphor of a tree and showing them a transparency where my tree’s roots are what I learned from early family experiences, limbs add school experiences, and the highest branches are the most recent learning experiences (see Merryfield, 1993). I explained how I now, in retrospect, perceive my process of learning about my own culture and cultures of people different from my own and name this reflective...
process "lived experience," ongoing reflection on how people make meaning of their experiences and how that meaning changes over time (see also Van Manen, 1990). Then I gave the teachers time to sketch out some preliminary ideas and choose two people they did not already know to share their initial reflections on their cultural identity and their experiences with people different from themselves. As homework, I asked them to go more in-depth with reflections upon their own cultural learning and then use their reflections as illustrations as they write a short paper on how they believe people come to understand their own culture and the cultures of others.

The threaded discussion version addresses the same goals but enriches the assignment with different methods and considerably more breadth. It includes the posting of bios in a threaded discussion (each person in class has a thread), follow-up questions or responses to bios by others in class, and then the online discussion of how we as a class community have developed our own cultural identity and our knowledge about other cultures. First I ask them to introduce themselves to the class through a reflective bio that they post in the first threaded discussion:

First write a half-page (single-spaced) description of your cultural background and identity so that everyone in the class can get a sense of who you are. Then choose three or four words you would use to identify yourself and type them in under your name and email address at the top of the page. In the next half page describe some of what you think have been your most important experiences with people different from yourself as a child, in school and university, and as an adult. What were you taught about people different from yourself? What have you learned through actual experiences with people different from yourself? Click on the instructor's bio for an example of the required format (from the T&L 881 website).

In this assignment I post my bio before the class begins to provide information on myself and as an example of the format I want them to use. In some classes I have taken them to a computer lab so that everyone learns to use threaded discussion where I and technical help are available. Lately I have found that my written step by step instructions work well enough that the teachers can learn how to get into, read and post in threaded discussion without the need for lab time. (See Appendix C for a sample bio.)

After discussion of the bios is underway, some teachers post a new edition or addendum to their bios with more or different information in it as a result of having read everyone else's bios or having
been asked questions they want to respond to with more information or illustrations. Once the bios are posted, we go into the second step of online community building by discussing who we are as a group of educators and how we can learn from the bios to begin to build a course community:

Use your reflections from reading all the bios to contribute to threaded discussion two: How have those of us in this course learned about our own culture? About cultural differences? About discrimination, inequities, and privilege? What have those of us in this class learned about people different from ourselves? What helps us learn about “others”? What experiences do we most value in culture learning? See the beginning of Class Discussion for some ground rules for on-line discussions (T&L 881 website).

As the teachers comb all the bios to get a sense of who is in the course and what diversity and equity might mean in this online community, they are able to bring much more specific data into the discussion than the teachers in the campus version are able to retain from listening to each other speak about their bios. This depth does have a trade-off in the time needed to complete the activities—a hour discussion in class and a homework assignment versus several hours in the construction and posting of the bios, reading all the bios, joining the threaded discussion and manipulating its table of contents, clicking on individual messages, scanning down to read each and then going back to the list of names and topics again to choose another to read.

The teachers perceive these initial online postings of bios and threaded discussions as more purposeful than an oral class discussion because of the “deliberate nature of reading and writing messages” as “we have the time to bring in other ideas.” Amazingly to me, they bring into the discussion quotes from readings or another website and even add an URL (the Internet address of a site on the World Wide Web) as a hotlink to another website. The teachers also appreciate having the time for leisurely perusal of others’ bios and contributions to discussion before responding. From the first time I used threaded discussion for this assignment, it was obvious that the teachers produce better quality bios when they know they are being posted on the course home page and others in the class will be responding to them than they do when they give a brief oral presentation and hand them in to me or post them on a cork bulletin board in the classroom. As one teacher explained, “if it is going to be there for everyone to read, I want to feel good about the way it represents me.”
There is also another unintended but significant outcome of using threaded discussion to build a diverse learning community. By my requiring them to post bios online and use the posted bios for another threaded discussion instead of simply sharing them in a face to face seminar, the teachers actually learn about people in the entire class and begin patterns of interaction based upon the content of messages. Without seeing the people they are responding to, there is much more interaction across cultural differences than in face to face discussions. Literally “meeting” people online appears to create a dynamic that frees people from some of the norms of the learned behavior of face to face interaction in ways that allow people to connect and find commonalities, ask questions, and form interest groups with people whom they would not choose to walk over and sit by or join a group within a classroom. I have found that the teachers initiate a conversation with someone “different” from themselves in race, nationality, English (as a Southerner I have often noticed the bias some people in my classes have towards teachers with Appalachian or Southern accents), physical appearance (age, dress, etc.) about four times as often as they do when this introductory community building assignment takes place face to face.

The teachers’ interaction within structured assignments (a specified number of messages and topics) also ensures a more holistic and equal introduction to all people in a class since they literally study everyone’s bio and read messages generated by everyone, not just a few who choose to speak out in front of the whole class or two or three in their small group. Threaded discussion promotes deliberate reflection on the data generated through the bios about identity, culture, the process of learning prejudice, perspectives of privilege, and other course concepts. It also creates a safe place where people in a diverse group feel more comfortable than they do face to face in discussing their own experiences and the hard, sensitive issues of prejudice, privilege, inequity, and power.

Other online work throughout the course serves to reinforce and strengthen these early outcomes as, in one course, when the week one bio posting and discussion was followed in week three with an online discussion of some controversial readings, in week five with a debriefing of a seminar’s cross-cultural simulation and a field trip to a local mosque, and in week seven with the posting of project proposals and subsequent threads of questions and suggestions about the proposals and resources for developing them. Regular online interaction keeps alive and strengthens the initial excitement and cross-cultural learning that begins with the bios.

I did not expect such changes in community building when I moved from oral exchanges face to face to computer-mediated interaction, and as a person who has believed in the power of long-term
face to face cross-cultural experiences, I have struggled to understand what is actually happening. When I first observed these phenomena in my totally online course, I hypothesized that these changes were because the teachers could not characterize their classmates by their physical presence, facial expressions, dress, voices or accents, body language, eye contact, or other information that is automatically digested as people interact face to face. Perhaps since the teachers literally constructed their identity through the online bios, they would choose not to reveal their race, age, class, national origin, disability or other characteristics that might or might not contribute to how people perceive them as "the other" in a face to face class discussion. Or perhaps the changes were related to oral versus written communication since people were writing in a response to text instead of speaking to a three dimensional person. Was it an interaction of both the lack of visible and audible stimuli and the oral/written differences that affected how people choose to express themselves?

In studying these changes over the last two years I have compared online discussion with the face to face discussion of the exact same group of teachers on the exact same topic. I have even experimented with taking my whole class to the computer lab so they are in the same room and could actually turn around and look at each other as they discuss a topic online. Once I even used the lab for this first hour of seminar and then in the last hour had the teachers move away from the computers to an oral face to face discussion so that I could compare the interaction process and content on the same questions. Even under those circumstances the online and face to face discussions were qualitatively different in addressing my goal to bring about a cross-cultural learning community. Online discourse is substantively different from face to face, especially on sensitive and controversial topics.

Discussing Issues of Prejudice, Privilege, Inequity, Injustice, and Imperialism

In my twenty years of teaching courses in multicultural and global education, I have rarely seen teachers in heterogeneous classes actually want to discuss their own prejudices, racism, white privilege, homophobia, or their nation's prejudicial mistreatment of groups of people, or other hard issues that come as part of education for equity and social justice. Usually teachers play it safe and become silent with downcast eyes. Such body language is a powerful reminder of how uncomfortable people can be with these topics. The observable inaction of making no response appears to be a universal way of demonstrating withdrawal or refusal to discuss controversial topics. However, much of this resistance to engaging in discussion on hard topics
disappears immediately when I take discussions online. I find most teachers either initiate or follow up on discussion of sensitive issues in the first threaded discussion, and many demonstrate a willingness to take risks in revealing either uncomfortable personal experiences or politically incorrect views. And this frankness and open flow of thoughts and experiences is shared equally by teachers from other countries, another unusual behavior as international students in my classes are almost always more reticent than the Americans in discussing sensitive issues. Threaded discussions are perceived by almost all of the teachers as much more open and frank than class discussions on campus and, correspondingly, much less spontaneous and "passionate." An ongoing debate among teachers in my classes is whether or not people can read other people's emotions (fear, excitement, disgust, and hate are a few that have come up), sense of humor and seriousness accurately in messages posted electronically. Teachers especially value the choices that threaded discussions give them as they can chose what thread (topic) to join in discussing, and they are free to initiate a new topic at any time. As one teacher noted, "you don't have to deal with someone monopolizing the conversation, and you aren't intimidated by eye contact or body language." See Appendix B for messages in such a thread.

Within the literature on electronic discussion, scholars have recognized that people are less inhibited in sharing their points of view and sensitive material when they interact online than they would be if face to face with the same people (Halio, 1997; Warschauer, 1999). In follow-up discussion and formative evaluation data, the teachers explain their online behavior in a number of ways. Some say that they are more comfortable sharing controversial, sensitive or personal ideas or experiences when they do not see people's reactions to them. Others write of feeling free to say what they think because sending written messages is different from saying things aloud: "Just like you can say things in letters you wouldn't say to a person's face." A few also find it a relief or liberating to have a place where they can ask questions or share experiences that they would never share face to face in a group of people they perceive as different from themselves. "Different" here usually means a different race or different nationality. In my global education classes, which have a much higher percentage of males than do my multicultural classes, "other" is also used by the teachers when they mean gender differences. The facelessness of online interaction allows some people to overcome their usual norms of behavior which inhibit or constrain their speech, and the threaded discussions (as well as course listservs) provide a venue where many feel they can "talk" frankly about family racism, their own privilege, perceived inferiority of some people, their shock over the realities of com-
ing to live in the U.S., resentment of affirmative action, feeling “different,” and other sensitive and uncomfortable topics.

This willingness to engage in discussion on prickly issues has also been evident when I assign a discussion of readings through threaded discussion instead of holding it face to face in either small or large groups in a campus classroom. After two years of learning with teachers about the dynamics of this online medium, I now choose the first “sensitive” or controversial readings in the course to assign for threaded discussion. For example, the last time I taught my Infusing Global Perspective in Education seminar, I required teachers to select 30 accounts of prejudice, discrimination, and injustice from over 700 pages of essays in *On Prejudice: A Global Perspective* (Gioseffi, 1993) for a threaded discussion. After five days, forty-four threads and 155 messages, I had evidence that the teachers had not only a broader understanding of the readings and different ideas on how they might use them in teaching social studies, but they had engaged in difficult and controversial issues about justifications of inequity and injustice that underlie the construction of knowledge and the writing of history.

What teachers learn in my courses changes when online discussions create a safe place to tackle hard issues and “listen” to points of view that usually are unspoken in a classroom on campus. The teachers say it is less threatening to be confronted with a perspective or experience contrary to one’s own worldview online than face to face. The process of spreading out discussion over several days supports well thought out messages and often leads to teachers’ rereading an essay being discussed or teachers’ bringing several readings together to make a point.

### Supporting Equity and Listening to Voices Often Marginalized in Campus Seminars

In *Moving The Centre: The Stuggle for Cultural Freedom*, Ngugi wa Thiong’o (1993) writes of an education where all learners feel they are the center of instruction. At the micro level, moving the center means inclusion of all cultures, religions, or languages (and other significant differences) of students in a class so that no one feels other people’s history, literature, or language is more valued than their own. His ideas are not unlike the equity pedagogy of James Banks (1995; also see Banks and Banks, 1995) or Carl Grant (Grant & Millar, 1992). At the macro level, moving the center includes valuing all cultures as globalization intensifies human interaction, instead of what some see as twentieth century American/western cultural imperialism, as globalization led by American hegemony and technology change the world (see also Said, 1993; Johnson, 1993; McCarthy, 1995, 1998; and Ashcroft, Griffiths & Tiffin, 1989).
I find that threaded discussion can be used to bring to the center of my courses’ communities some learners who, because of perceived or real differences from people in the mainstream, are often marginalized by the content, pedagogy, or people in graduate seminars on campus. With the exception of my “Teaching about Africa and African Perspectives” course where Africans and African Americans control the discourse of seminars by their expertise on the course topics and their majority status in the class, I find I need to orchestrate norms of behavior in my classes or many international students and Americans of color are silenced or marginalized to the periphery of power and influence by a very vocal middle class white majority. In a sociogram of the teachers’ interactions and rates of participation in both small and large group activities in my classes, some students almost always become invisible. The majority of my students who do enjoy more privilege in the larger American society do not question such patterns of power and interaction in graduate seminars as they perceive them as normal. The phenomenon of white Americans controlling the center is highly visible when I observe the teachers choosing their own groups or group leaders, or when I take notes on interaction patterns, eye contact, body language, or who controls the discourse and who is ignored, silenced or never brought into the conversation. If I set up ground rules or purposefully explain that I am evaluating individual performance by the ability to share the center or assessing a group performance by its inclusion and equitable distribution of voice and power, there is some movement. When I purposefully structure seminars so that the international students or African Americans are the center of an activity or discussion, many whites in the class perceive this action as discriminatory or “unnatural” or have made comments such as “it’s not Black History month, is it?” At times, some of the international students and African Americans have also expressed discomfort during such classes as they observe the white resistance, and they have told me they doubt that any artificial or temporary change in power relations within a class is productive. Outside of class, I have spoken with many students and teachers about goals and strategies for decentering both the instructor’s authority and that of the dominant culture in our graduate programs and within school/university collaboration. Although almost everyone I work with will admit that students of color and international students are not “centered” in their classes at Ohio State, few see any hope of changing the university culture. Through the years some of my African and African American students have shared with me their relief or joy in taking courses in the Department of African American and African Studies because there they have sanctuary from being “the Other.”

In my introduction to threaded discussion we go over some ground rules, such as my requirement that each person speaks only
for him/herself (not for his/her race, religion, country, etc.). I provide some contexts for understanding how online discussion can be misconstrued since we are all so used to visual clues when interpreting the meaning of words. We examine three messages where J’s sense of humor, T’s pain, and B’s irritation were totally lost to many teachers in another class as they read those messages. I share some examples of teachers demonstrating respect while at the same time disagreeing with or challenging another. We look at some possibly insulting or inappropriate messages and talk about alternative responses, such as asking for clarification.

Within threaded discussions I structure participation so that no one can monopolize or dominate discussion. It is hard to imagine a discussion within either a whole class or small groups on campus in which every person has the same amount of time to speak or contribute to collaborative work. Because everyone posts the same number of messages in my threaded discussions, there is literally equal participation in the quantity of each person’s contribution. Online everyone participates at the same rate unlike a typical class discussion where a few want to talk all the time, some choose to participate occasionally, and others not at all. And when those who are usually silent contribute at the same rate as those who tend to monopolize, some interesting changes come about in what people learn.

However, the quantity of contributions pales in importance when I look at who interacted with whom, how the lack of dominance of any one group in initiating new threads changes the substance of what is discussed, and how people respond to others in ways that support, confirm, question or challenge another person’s ideas. In doing a content analysis of the threads across all the threaded discussions in all my classes, I find no patterns of certain individuals initiating or controlling the discourse or silencing others. Unlike my usual class discussions in Arps Hall, I do not see that people prefer to interact with people like themselves in race, gender, national origin or language. I have found that there is a much larger degree of interaction across the groups of white teachers, Americans of color, and international students online than ever happens face to face.

Some people who choose not to participate in discussions face to face become discussion leaders in threaded discussions. One quarter I observed three Taiwanese women and one white American woman who were totally silent in the full class discussions in seminar unless I called on them but were often at the center of discussion online as they shared their ideas, critiques, and experiences. In two threaded discussions it was obvious they were becoming discussion leaders as many others followed their lead as they initiated new strands or raised new points. Fascinated by the difference between the online discussions where these women were at the center and the face to face dis-
discussions where they were on the periphery, one night in seminar I asked the class what people thought about the differences in what was happening online and what happened when we were face to face. That class discussion went nowhere, but late that night and the next day there was an intense discussion on the course listserv of how “classroom” discussions benefit some people and hurt others, how learning is connected to students’ comfort level, culture, or shyness in large groups, and how we choose whom to interact with online differently from how we choose whom we want to interact with in class.

In the evaluative data the teachers explain that their online interaction patterns are different since they are responding to words on a screen, not a face or body language or some other physical characteristic that might make them feel uncomfortable or hesitant in a face to face discussion. A number of the teachers whose first language is not English said that they felt they had the time to comprehend the discussion and join in, where often in a graduate seminar the English was difficult to understand or keep up with. Or, by the time they mentally constructed a comment to share, the discussion had gone on to other topics. International students confided that in seminars on campus they often see Americans as “very aggressive” or “dominating” in the ways they “control” class discussions or “get their voices into everything” in a class. One Chinese woman noted “in the threaded discussions Americans have no more control than we do so we don’t feel so much outside.”

I would also hypothesize that entering in to one’s first online discussion is not easy for anyone and the strangeness of asynchronous class time and the novelty of “reading” a discussion causes a paradigm shift that allows new choices and new interaction patterns to arise. I would like to explore whether in lowering inhibitions of some learners, web-based instruction increases learning for people who are shy, uncomfortable in large groups or hesitant with their spoken English.

Paradoxes in Using Electronic Technologies for Multicultural and Global Education

As I have struggled with using web-based strategies and making sense of their outcomes in my courses, I have found some issues that interrupt my thinking and challenge any easy conclusions that electronic technology is better than the strategies it replaces. In spite of (or perhaps related to) the effect of threaded discussion jump-starting the sharing of confidences, tackling hard issues and enthusiastic explorations of the diversity of peoples’ lives and reactions to course content, many teachers look back on their online experiences as “unreal,” “a game.” They perceived online interaction as artificial and
discount learning from online conversations as less meaningful than what they experience face to face. There are intriguing contradictions in their feedback. Teachers write about highly valuing threaded discussion for stimulating insights into cultural learning and providing a safe place for frank talk. Then, the next day, or even within the same message they describe the same technologies as barriers that kept them from “knowing” each other or having “real” relationships. Since a major goal of my courses is cross-cultural understanding, this paradox is a significant one. What does it mean to know someone through an online relationship? What tacit understanding does face to face interaction bring about that online interaction does not? Are there specific, qualitative differences in understanding another person, especially one from another culture, when people meet, sit together and talk instead of sending messages over the Internet? How do the seemingly intense discussions and weeks of collaborative work online actually contribute to teachers’ learning and teaching? At the end of one class a teacher asked, “was it all a charade?” I can very much relate to Fabos and Young’s (1999) critique of cross-cultural learning through electronic technologies in their recent article “Telecommunication in the Classroom: Rhetoric Versus Reality.” Relying on online communication to learn about people very different from the learner can be very misleading because vital contextual factors that would be present in authentic face to face communication are missing. It reminds me of one of the stage sets used in films about the old West. In the movie the town looks real, but a visit to the set shows that storefronts are facades with no substance.

One point reiterated by many teachers is that there is a kind of “tacit assessment” and “compilation of observable minutiae” that informs us or “feeds in our data banks” as we meet and interact with new people face to face. Such data are psychologically missed in interaction that does not include all senses—hearing an accent, seeing a face, smelling a hair gel, or touching another in a friendly hug. One teacher described this face to face assessment as “you don’t know someone until you look in their eyes.” So some teachers perceive the online interaction as partial or “incomplete” even if they actually see the same people a few days later in seminar because they only “trust” what people say and do when they are looking at each other. There is also a perception among a few teachers that people play games, fabricate stories or simply lie online, but “you can trust what they say” when face to face.

There are also issues related to the asynchronous quality of web-based teaching and learning. Convenience is the most frequently mentioned reason teachers like threaded discussions since they can work on these assignments “after my children are in bed” or at any hour day and night from their school, home, or a neighbor’s computer. Since
all messages are dated as they are posted, I have learned that many teachers work on these assignments late at night or very early in the morning. During one threaded discussion last summer four teachers and I found we were all posting messages right at 12 midnight E.D.T. We witnessed each other’s new messages popping up when we refreshed our table of contents after posting a message since there is a color change on screen and messages previously read appear one color and new messages another. But do teachers enjoy this convenience, this electronic distance, because they do not have to interact face to face with a person of a different race or nationality? Will teacher educators choose online instruction because it is convenient and avoids the conflicts of face to face interaction between teachers of different races, languages, and cultures?

Asynchronous time over the Internet also adds new possibilities to “attendance” and meeting deadlines. Where teachers would entirely miss a class discussion on campus when ill or out of town, they can participate in a threaded discussion from another city or when they are feeling better. In one of my classes, a teacher traveled from the U.S. to Poland for two weeks during the course and yet stayed up with his assignments and class discussion through a computer there. Another had an emergency surgery and would have had to drop the course because of missed seminars if she had not been able to stay up with the class electronically. Time is also a downside. When discussion becomes a reading and writing assignment, it takes considerably more time since writing what would be a two-minute contribution to an oral discussion takes significantly longer than speaking it. Plus most of the teachers and I find we want to edit what we write before posting it. Surprisingly to me, relatively few teachers complain about the time allocated in my classes for web-based assignments. And unlike the relatively large numbers two or three years ago, this year only two teachers have asked for alternative assignments because they do not want to use computers, and only four have told me they don’t have previous experience in using the Internet and webpages.

Another issue is the “read and write” nature of threaded discussion. It fits the learning styles of those who can express themselves well through email, feel comfortable with electronic technologies and can learn effectively by reading and writing in this medium. People who excel in oral or hands-on work or prefer face to face encounters are undoubtedly at a disadvantage. Unlike oral discussions in a classroom, literally every word students and instructors “say” to each other in a threaded discussion is recorded, and it all can be retrieved, examined or printed out at any time. At the end of each course I have a record of my own and everyone else’s contributions to the threaded discussions. I can go back and analyze the patterns of cross-cultural interaction, examine how course concepts were dealt with in assign-
ments and identify weaknesses in my planning, instruction, or communication. I remember looking at the one inch high print-out of the first threaded discussion I ran in the summer of 1998 on building a cross-cultural community and thinking what an incredibly rich treasure it was for learning about teachers' cross-cultural interaction and learning. Having such a record also raises issues of privacy and access. The course homepages are secured by passwords to ensure that only people currently in the course have access. At the end of each course, the teachers are given the option of removing all their work from the archives so that no one can ever see it again. When I want threaded discussions to continue into the same course another quarter (such as a threaded discussion where teachers post recommendations of course-related web-sites and other resources), I ask them whether or not they want to leave their work on the homepage. But these procedures do not address all aspects of the ethics of written discussion.

The single site, a relatively small number of teachers, and my lack of expertise in technology limit the findings described above. We need studies designed by researchers in both technology and multicultural and global education across many contexts to understand how electronic technologies can improve these aspects of social studies teaching and learning. But the potential is clearly there. I challenge social studies educators to explore connections that can be made between liberatory or emancipatory pedagogies and electronic pedagogies. There are parallels between the two paradigms as they decenter the instructor's authority to "a guide on the side, not a sage on the stage" (Damarin, 1998, p. 17). They share a recognition of multiple ways of knowing and reject a baking system of education. Both liberatory pedagogies and electronic pedagogies value information and knowledge from the margins and provide alternatives to mainstream academic knowledge (Damarin, 1998). Will social studies educators use the new electronic technologies to maintain the status quo or to improve equity, support diversity and teach for global interconnectedness?

Appendix A
Excerpt from the Table of Contents of a Threaded Discussion

Discussion two TOC (Framed) http://www.coe.ohio-state.edu/mmerryfield/disc2-tof.htm

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Re: We Have No Reason to Celebrate an Invasion (p. 12-13) Nancy Luaces — 7/12/99
Re: Does race matter?  
http://www.coe.ohio-state.edu/mmerryfield/638%20discussion/638%20discuss/contribution%201/post.html

Discussion I Winter 2000

Re: Does race matter?
From: A
Date: 1/21/00
Time: 11:25:59 PM
Comments
As I was reading the Gloria Ladson-Billings article [1994b], the one point that struck me the most was the question “Does the Race and Ethnicity of Teachers Matter?” (27). While she states that there is no evidence that race makes a difference, I tend to question this. Throughout my own education, I have noticed many biases in classrooms, both during high school and in college. I think that no matter what a person’s intentions are, it is hard to overcome the fact that they are a member of the “Culture of Power.” Delpit states “Those with power are frequently least aware of its existence. Those with less power are often most aware of its existence.” (74). I believe that this is true, but it is only something that I have begun to think about recently. Basically, I guess I am wondering what other people’s views on this matter are. Does anyone think that race does or does not matter? No matter how hard I try, I will never truly understand what it is like to be discriminated against to the degree that many minorities have. No matter how conscious of this I am, I wonder if this will effect my ability to understand what my minority students have been through.

Re: Does race matter?
From: S
Date: 1/22/00
Time: 3:37:38 PM
Comments
The excerpts I’ve read from Cornell West’s Race Matters indicate a grim reality for African Americans. However, I agree with A in terms of the socialization of whites in that many of us are brought up believing that all African Americans are of one, poor, disadvantaged culture. Surely nothing could be farther from the truth. In fact there is a grand socioeconomic variety among African Americans as there is with any group. However, the larger question “does race matter?” is far too complex to be answered here. In order to answer it we must delve into sociological debates regarding social conflict theory and functionalist theory. Do I think that African Americans learn better from teachers of similar backgrounds? Not necessarily. I believe that good teachers are able to bridge the divide and help students of all backgrounds attain their goals. However, if a teacher is of similar background (whether racial, socioeconomic, or gender-related) he/she may have an advantage in terms of “knowing” the students. After all, it is much easier to relate people with whom you feel similarities. So the answer to “does race matter?” is- Perhaps.
Re: Does race matter?
From: P
Date: 1/23/00
Time: 9:53:31 AM
Comments
A, after spending a year substituting in C, I had a few experiences that made me realize that race does matter. I was in a classroom with 25 black students and 2 white students. After asking a question, three black students and one white student raised their hands and I called on a black student. This happened several times. I could see the white student getting upset that I had not called on him. Finally, I called on the white student and at that moment, one black student yelled out “You called on him because he is white!” What do you do when something like this happens? I didn’t think race mattered.

Re: Does race matter?
From: S
Date: 1/23/00
Time: 12:18:41 PM
Comments
P-
I relate to this experience from my time teaching in C Public Schools. It raises some very difficult issues, I often struggle with the fine line between recognizing the legitimate inequality and subtle forms of racism, and the opportunity for people to use this as an excuse. The victim mentality is so pervasive in our culture that we must be very careful in how we discuss race with young people. I believe it is possible to create a self-fulfilling prophecy by convincing someone that they are victims rather than convincing them that they have opportunities and various levers of power at their disposal.

This tendency I refer to is not limited to issues of race. For example, a student who did poor quality work in my class recently told another teacher and her mother that she thought I didn’t like her. Nothing could be farther from the truth; I like her a lot. However, she transferred my critique of her schoolwork to be a critique of her personality. The same can occur when race becomes the prism through which all actions are judged. The student is white, but if she were black she might have levied charges that I was racist or culturally biased. What then?

Re: Does race matter?
From: K
Date: 1/22/00
Time: 3:31:20 PM
Comments
I have given quite a bit of thought to the number of readings we have had on this subject, and done some self-observations. I think that not only would Delpit, Sleeter, and McIntosh say that it absolutely matters, but they are also putting it out for us to address as an issue in our teaching content and methods.

Initially, the issue was rather awkward for me to focus on because I was brought up to overlook skin color and national origin. Actually, I was brought up so immersed in multiculturalism that I did not notice it. But living in largely white suburbs over the last few years, it has become more evident that I DO notice race. I was on an elevator at the mall last week and an Asian woman got on. And that was what I noticed, not the color of her sweater, but her national origin. This did not lead to my passing judgement, but it does bring up to me that race is something that is prevalent as an issue everywhere, and at different levels.

So do you guys think that what Delpit is saying to us is that our license to teach is our license to confront these issues head on? Two weeks ago, I would not have felt comfortable talking about race. That feeling is changing in me, dramatically. She is saying to us that we MUST talk to parents about how their kids learn, and we MUST talk to our kids about racial oppression. We are the ones in the position to do that, and we are the ones who should feel not only NOT awkward about addressing racism, but rather compelled to, because our students’ futures may depend on it.

Re: Does race matter?
From: T
Date: 1/23/00
Time: 11:24:15 PM
Comments
K
I agree with you wholeheartedly. I think that Delpit not only means to give teachers license to discuss racial matters etc in the classroom, it also ties directly into addressing the "culture of power" that students will face outside of school. We must, in fact, address racial issues in our classrooms, whether they are in an all white suburban school, or an inner-city school with a predominantly African-American population. The fact is we live in a country where whites are in power and there is growing racial diversity. At some point, understanding racial issues will become extremely important to our students to succeed in this country. We owe it to them to discuss race and the power structure in this country to better prepare them for life.

Appendix C
A Sample Bio

GS

Email: gs@osu.edu

Pole, Traveler, Tourist, Teacher, Cynic

Cultural Background
I was born in Poland in the very interesting region called Upper Silesia. This region was for years an object of conflict between Poland, Germany, Austria and Czechoslovakia. As a result of living "at the borders" of at least three countries, this place appeared to be a diverse and multilingual culture. Unfortunately during Communism (and earlier) indigenous people were almost always a lower class and this industrial region (coal mines and steel mills) was exploited. I am a child of two cultures - my mother is Silesian and my father was from Cracow (symbol and former capital of Poland). For many years I did not realize that it could be a problem - probably thanks to my parents skills in joining the cultural values and patterns from different families. It was late elementary school when I noticed that my Grandmother's language (from Silesia) was not accepted by official culture even though we lived in Upper Silesia. It took me years to create my own way of dealing with this problem and accepting my heritage.

Experiences with Cultural Diversity
I studied also in Upper Silesia in Katowice at the Academy of Physical Education and at Silesian University in the Department of Sociology. I had opportunity to participate in many research projects concerning the phenomenon of Silesian culture and history. We talked with old people about their experience of living in different countries during their lives and we tried to save their memories, customs and values. These projects were very often conducted on the margins of the officially accepted Academy.

I started teaching in the year when Communism collapsed. Since then, numerous changes have appeared in Polish social life. There is now also a bigger place for diversity and multicultural approaches. However, Poles still are focused more on political than cultural freedoms. Unfortunately, democratization has negative aspects also. It is possible to hear voices of prejudices and biases.

As a social studies teacher I try to discuss and deal with this problem during classes and also outside of the classroom. We (my students and I) were involved in many nongovernmental projects in Poland concerning different issues (for example, an international project between Germany, Ukraine, Israel and Poland). Lately I felt that I needed a new portion of energy for the next years of teaching and a new perspective to rethink my role as a teacher. Therefore, I decided to apply for a Ron Brown fellowship (in education). I received the fellowship and decided to come to Columbus (OSU) because I had had great experiences when I had participated in the civic education exchange between the Mershon Center and Center for Civic Education in Warsaw two years ago.

Learn from this Course...
Although I do not believe in the ideal solutions I hope that this course will help me in becoming a better teacher, so I will be able to understand my students' behaviors, values and beliefs. I also hope that, thanks to this course I'll acquire the ability to deal with diversity and potential conflicts in school and outside of school. Finally I hope that I will find ways of understanding the problems of the contemporary world based on cultural conflicts.

References


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Computer Mediated Communication in Elementary Social Studies Methods: An Examination of Students’ Perceptions and Perspectives

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Abstract
What are the benefits and results of using computer mediated communication (CMC) in preservice social studies methods courses across universities? This question is being explored through an analysis of preservice social studies teachers’ web-based asynchronous dialogue. This inquiry involved an investigation of perceptions and perspectives of social studies methods students from two universities following their participation in a semester-long online dialogue exchange. A number of research studies have concluded that CMC substantially increases communication between teachers and students and among class participants (Hartman, & Zuvbrow, 1994; Schrum, 1995). CMC also empowers students to accept greater control and facilitates the construction of a shared knowledge base. This qualitative study examines current research in the field of educational telecommunications through the lens of the social studies methods course. The findings reveal the benefits and drawbacks of using CMC in methods courses between two universities and provide recommendations for effective future implementation.

Between fall 1994 and fall 1998, Internet access in public schools increased from 35% to 89% of schools. The percentage of public school instructional rooms with Internet access also increased during this time period from 3% in 1994 to 51% in 1998 (U.S. Department of Education, 1999). This statistic is one indication of how rapidly and drastically our personal and professional lives are changing because of the Internet. Access to the Internet offers us new means of teaching, researching, shopping, banking, and communicating with others. Branscome (1993, p. 12) stated that “global networks are the electronic
highways of world commerce, culture, credit, scientific research, and literary productivity...They are essential to our economic, social, and political survival."

Recognizing these paramount changes, the current United States administration has charged teachers and schools with the goal of ensuring that all children are technologically literate and "equipped with the skills essential for enhancing learning and improving productivity and performance" (President's Educational Technology Initiative, 1996). This call has been accompanied by a corresponding investment in hardware, software, and technological infrastructure. More than 2 billion dollars have been pledged to schools through the federally administered E-Rate program, a program designed to ensure that all schools are linked to the Internet.

The President's Committee of Advisors on Science and Technology (PCAST) Panel on Educational Technology notes, however, that "substantial investments in hardware, infrastructure, software, and content will be largely wasted if K-12 teachers are not provided with the preparation and support they will need to effectively integrate technologies into their teaching" (PCAST Report, 1997). The type of preparation is crucial. Until recently, an emphasis has been placed on "basic drill and computer skills rather than on use of technology as tools for discipline-based learning" in the majority of schools (Becker & Ravitz, 1999).

The NCATE (National Council for Accreditation of Teacher Education, 1997) Task Force on Technology in Teacher Education recommendations call for "a vision and a plan for teacher education programs that will integrate technology into the teacher education curriculum using modern telecommunications, with links to exemplary practices of technology use." Adhering to this call, we designed a web-based format to facilitate discussion among elementary social studies methods students from two remotely located universities. Our intent was to create a virtual environment for students to reflect on and discuss issues unique to elementary social studies methods, while at the same time learning the skills needed to engage in telecommunication.

Thoreau (1957) questioned a year after the invention on the telegraph, "We are in great haste to construct a magnetic telegraph from Maine to Texas; but Maine and Texas, it may be, have nothing important to communicate" (p. 36). As teacher educators, we must pause and ask ourselves similar questions: Why use CMC in social studies methods courses? What if preservice teachers across settings have nothing important to communicate to each other? This paper commences an investigation into preservice social studies teachers' experiences and perspectives about CMC in social studies teacher education.
Review of the Literature

Computer Mediated Communication (CMC)

To best prepare social studies educators for today's children, Armento (1996) declared that social studies teacher education programs have a responsibility to "build ongoing and stimulating collaborative linkages among social studies educators" (p. 497). Often, time and geographic barriers limit social studies professionals' ability to collaborate and engage in professional dialogue with one another.

Computer mediated communication makes it possible to extend the learning community beyond the walls of traditional teacher education courses (Bliss & Mazur, 1996). Schrum (1991) argued that CMC holds the potential of restructuring preservice teacher education, "by enhancing meaningful preservice experiences and giving teachers knowledge and confidence about using these tools in their classrooms" (p. 42). A review of the literature reveals the most widely applied mode of CMC being used by teacher education programs is email (Schlagal, Trathen, & Blanton, 1996). In this context, CMC is used primarily as a conduit for social and emotional support, rather than reflective inquiry. Casey (1997) has found the major benefits of using email during the student teaching experience to be increased reflectivity, feeling of rapport and support from university supervisors, access to supervisors and university personnel, team support, and self-esteem due to mastering technology and receiving positive support through email messages.

CMC facilitates the development of a community of learners among social studies preservice teachers (White, 2000). Following implementation of CMC, learners with diverse backgrounds may begin to evolve a common understanding with other members of the learning community (Riel, 1989; Fishman & Pea, 1994). CMC fosters a sense of learning as dialogue, rather than individual instruction and study (Koschmann, 1993).

However, Fabos and Young (1999) cautioned,

while the Internet and projects such as telecommunication exchanges can offer a great deal in terms of broadening the curriculum and tapping into alternative ideas, voices, and cultures, they are also dependent and rooted in a technology (like all technologies) that operates with private interests, not specific education skills or pedagogical democracy, in mind. (p. 249)
Necessary components for effective CMC include specific instructions and expectations, monitoring, etiquette, and involvement of all (Parkyn, 1999). White (2000) states issues that must be addressed including access to and troubleshooting regarding technology issues, appropriate online discussion etiquette, and facilitating the components of powerful social studies teaching and learning. Other issues include constant monitoring and involvement by the entire learning community (instructor and students); encouragement regarding individual postings and replies to postings, including controversial, challenging, and open-ended questions by all; encouragement regarding postings of references and resources; and the creation of opportunities for real time chats (White, 2000). The goal is to develop competent and creative users of technology who have the associated critical knowledge and skill to engage in CMC, while simultaneously challenging the pedagogic role of technology in enhancing the education process (Fabos & Young, 1999).

**Collaboration**

Computer mediated communication provides a context for examining the collaborative interaction that is central to the exchange process. This type of joint initiative relies on dialogue to fuel scholarly inquiry and professional development. There is an emphasis on shared participation and mutuality. “It is through dialogue that the value of alternative perspectives—to promote critical reflection and evolution in our own perspectives and practices—can be fully realized” (Clark, Herter, & Moss, 1998, pp. 787-788).

In contrast to collaborations that result in a shared work product, CMC represents a more integrated collaboration with “an emphasis on process, dialogue and empowerment” (John-Steiner, Weber, & Minnis, 1998, p. 777). The exchange between groups creates a newly constructed knowledge that is richer than the individual contributions of participating individuals. The process of collaboration counteracts the traditional isolation of schools and overcomes the perpetuation of rigid solutions that fail to promote quality instruction and learning. This reflective professional dialogue better informs the development and implementation of pedagogic practice. Ultimately, this exchange may contribute to the empowerment of educators to optimize their knowledge base and discover the richness of their skills for advancing powerful teaching and learning.

Although collaboration has previously been facilitated through face-to-face interaction, written communication, and/or telephone exchanges, these activities often have required a high investment of time for participation and consistent support for engaging in these
initiatives. Conversely, technology provides the tool that fosters collaborative processes and aids educators in their role and function.

The computer has the potential to facilitate widespread access to ideas and information. Educators can be empowered through the computer to break down the barriers of isolation and collaborate with broad networks of peers and experts locally, nationally, and globally. (Berson, 2000, p. 127)

Computer mediated communication provides a forum for accessing the resources of complementary backgrounds represented by diverse educational institutions. Reflection is fostered in an environment replete with supportive structures, alternative perspectives, and challenging content. This form of collaboration introduces us to the possibilities of practice while highlighting the limitations of our knowledge and capabilities. The shared value of discovery and growth fuels the pursuit of this endeavor while necessitating the present initiation of its study and analysis.

**Methodology**

The study sample consisted of two groups of preservice elementary education majors who were completing social studies methods courses, with the aggregate sample totaling 47 participants. One group (\(N = 19\)) was comprised of undergraduate elementary education majors at the University of South Florida. A second group (\(N = 28\)) was made up of undergraduate elementary education students who attend the University of Virginia. As part of a course requirement, students participated in a web-based asynchronous dialogue on a weekly basis. Initially, a professor-directed dialogue was structured. Gradually after the first month, the exchange evolved to a student-directed process. The exchanges continued over a 15-week period.

A subsequent investigation of the students’ perceptions and perspectives followed their participation in this semester-long online dialogue exchange. Students responded to an eight-item questionnaire on CMC in the social studies. All participating students provided narrative responses to the following questions:

1. List and explain three adjectives that describe your attitude towards using technology as an educational tool.

2. Did your participation in the online dialogue influence your attitude towards technology as an educational tool? Explain.
3. What barriers did you experience as a participant in the online dialogue?

4. How may you apply the process and tools of online dialogue exchanges to your classroom setting?

5. Did the nature of the audience impact your responses to the online questions? Explain.

6. What was the most significant aspect of your participation using the online dialogue? Why was it the most significant?

7. Has the online dialogue been most beneficial to the improvement of your social studies content knowledge, your understanding of applying information to the social studies curriculum, both, neither, or some other benefit?

8. What have we not asked about your experiences with using the online dialogue that you would like to add?

The constant comparative method was used to analyze the data collected from the various sources. Strauss and Corbun (1994) referred to this method as "a general methodology for developing theory that is grounded in data systematically gathered and analyzed" (p. 273). The data collection and data processing occurred simultaneously, in a "pulsating fashion" (Bogdan & Biklin, 1992).

Glaser's (1978) steps for analyzing the data in the constant comparative method were followed:

1. Collect preliminary data.

2. Identify categories of focus.

3. Continue data collection.

4. Begin writing about the emerging themes, while continually searching for new themes.

5. Work with the data and the preliminary analysis to reveal basic social processes and relationships.

6. Code and write, while focusing on the core categories.

As the research evolved, a running list of emerging themes was maintained, new patterns were added to the list and revisions made. With the completion of data collection, the list of patterns was clustered, yielding seven main themes.
Findings

Students' perceptions of CMC were varied and impacted their perspectives of using technology for their own professional development and teaching. In this section, we will present the following five assertions that emerged from the data:

1. Students were apprehensive at first, but highly motivated to use the web-based discussion group to engage in dialogue with peers at a remote location.

2. Students found it meaningful to interact with peers at a remote location.


4. Students' confidence in using technology for their professional development increased.

5. Engaging in the CMC enriched the students' understanding of social studies teaching and learning.

6. Students assumed more responsibility for the web-based discussion as the semester progressed and directed the discussion to classroom applications.

7. Students found the web-based interface easy to use, but felt constrained by its limitations.

Students were apprehensive at first, but highly motivated to use the web-based discussion group to engage in dialogue with peers at a remote location. When asked to report three adjectives that portrayed their attitude toward using technology as an educational tool, students responded most frequently with adjectives that described their anxiety and their interest in learning more about technology. A response by one student is illustrative:

Beneficial: I feel computer technology is a beneficial educational tool at any and all grade levels. By taking advantage of resources available via the World Wide Web...both students and teachers can expand their learning and teaching experiences...after taking this class I have made myself a promise to become computer literate so that my future students and I may make use of computer technology.

Uncomfortable: Throughout my college career, computer technology has made me feel uncomfortable. This stems...
from the fact that there have been long periods of time between my high school, junior college, and university experiences. During those periods of time computer literacy became a necessity, rather than a luxury, for students at all levels. Since I was working at jobs that did not require me to use computers, during my absences from school, I feel that I really missed out. I do not like feeling uncomfortable with computer technology so I plan to remedy the situation.

Eager: I am eager to become computer literate so that my future students and I can benefit from the resources available through computer technology. I am also eager concerning what advances computer technology will make in the future and how those advances will affect my future students and me.

*Students found it meaningful to interact with peers at a remote location.* Students’ online responses and feedback revealed that they were motivated to engage in the CMC because of the expanded audience. Sharing their reflections with peers across classrooms and receiving responses provided a sense of authenticity for the students. The students at both locations found it meaningful to have their voices heard and respected, as evident in their responses.

When I logged on to the dialogue, I was so excited to be a part of a social studies project . . . I felt like my response counted . . .

I responded to the questions first before reading other’s responses. That way I could respond honestly without being influenced one way or another by other student’s responses. Although you wrote your name on your response I still felt comfortable responding honestly and expressing my thoughts and feelings on the various subjects. It did not put the same amount of pressure on you that it would have if you had to make the same response in a presentation to the class.

The most significant aspect for me was that people actually responded to my questions!! I have the power to provoke and stimulate thought in a medium that is new to me. . .
The most significant aspect was receiving an answer from someone who did not have a pre-conceived notion of who you are or who they think you are based on how you look or dress. . .

*Students engaged in reflective dialogue.* Students used the CMC to reflect on their own thoughts and practices and to respond to one another's reflections. The awareness of their personal reflection was a consistent theme among the students' responses.

I think it served as not only a tool for gaining knowledge and new perspectives but also for support. Support for students and teachers who face strong educational issues everyday. It can be very uplifting and inspiring to see that others face the same problems you do as an educator.

The most significant aspect was the questions posed. I was really fired up to respond, and slightly intimidated at their eloquence and deep reflective quality. I enjoyed answering most of them, and struggled to answer some in my own head. They really made me think!

I found the dialogue to be informative and diverse. It is good to see people will always have their own opinions. It was also good to see people willing to communicate with others they do not know. It has planted the seed that this is something I could use with my students to help them reach out to students in other places.

*Students' confidence in using technology for their professional development increased.* Because students found the application of CMC meaningful for their own learning experiences, they developed a sense of confidence to use technology for other applications.

Having to learn to use the computer for the online dialogue helped me to realize how much information there is out there on the computer information highway. It also helped me to come into the 21st century with a better grasp on technology and how beneficial it will be in the classroom for all teachers and students, not just for social studies teachers.
When I finally went online and participated in the online dialogue, I felt a lot more relaxed. Up until then, I wasn't even sure I would know how to get to that web site. . .

It was very interesting to read other’s responses to questions posed over the computer. I was also surprised at how easy and convenient it was to use. This is a great resource to share ideas and experiences about internships for learning teachers or as a tool for first year teachers. Being so new into the field it is always helpful to get new ideas and thoughts from people who are in “the same bout” you are. After using this technology, I feel more comfortable and confident in computer technology.

Engaging in the CMC enriched the students’ understanding of social studies teaching and learning. Exploring content and pedagogical issues with one another, the students grappled with social studies specific topics. One example of the issues discussed by the students focused on Tapscott’s “Growing Up Digital.” One of the instructors posed the following prompt:

Tapscott argues that the students in our classrooms today are part of a NetGeneration. He believes to most effectively teach the NetGeneration, we should use technology tools for instruction. Do you agree or disagree with Tapscott’s view that technology promotes the constructivist learning theory? What are specific ways that technology enhances social studies instruction and/or ways technology distracts from social studies instruction? To read Tapscott’s statement: http://www.ncsu.edu/meridian/feat_6/digital.html

Sample Response 1

“Today’s baby will tomorrow learn about Michelangelo by walking through the Sistine Chapel, watching him paint, and perhaps stopping for a conversation.” This is from Tapscott’s article. Every time that I have read this comment, it has really bothered me. This past year I went to see the Sistine chapel. Although I had spent years studying Art History I was still not prepared for the absolute beauty of it. My greatest fear is that by idolizing the net we might begin to trivialize reality. Also a huge problem I have with this is that the student will not be talking to Michelangelo, she will be talking to a simulated response that some one has created. The Internet is not moni-
tored by an editor or an expert. Quality academic books must be screened by editors and experts. On the Internet, with the more fluid passage of information I think that it is easier for erroneous information and opinions to get through.

Sample Response 2
I agree with two of the replies I read in response to the technology question... I, too, understand the importance of computer or technology education in relation to the students' futures but I also believe that by focusing wholly on technology that students will develop limited skills, which will not be sufficient for future success. Technology focuses on individual work and imagination but it does not develop necessary social and practical skills which students must possess to succeed. For example, when I was a teaching assistant in a fifth grade classroom I was impressed by the computer abilities of the students in the class, but also frightened by the writing skills many of the students demonstrated. Often the students who were proficient in computer skills lacked important writing, grammar, or spelling skills all of which can be "fixed" through word processing programs on computers. This was not evident in all of the students but it occurred in enough of the students to cause notice of the issue. Technology must be incorporated into the classroom as it provides great resources and skill development in certain areas, but teachers must be sure to focus on developing skills off of the computer as well...

Sample Response 3
I agree with some of Tapscott's comments, particularly that today's youth are very much involved with the technology of the day - PCs, CD-ROM, Internet, etc. I believe that such technological resources have a place in the teaching of social studies, but as a tool, not as a replacement for discerning instruction. The technology resources of the day provide lots of information, but little knowledge. Information and knowledge are not equivalent. PCs, CD-ROMs, the Web, and video games cannot, at least none that I have seen to date, provide knowledge. Generally there is far too much information, presented in no real organized or contextual format, or if at all, in a format understood by the programmer, not a teacher who understands the student. Current technology is also extremely expensive, generally unavailable to the vast majority of classrooms and learners, and so complicated and user-hostile, still, as to provide as much frustration as enlightenment and consume HUGE amounts of time to accomplish the simplest of teaching tasks.
good example is teaching the use of graphing calculators in a math classroom. You might expect that today’s students would be rather technology savvy. They are not, any more than any other human is. They must laboriously learn all the procedures, similar to learning a foreign language, to be able to effectively use, much less learn from the technological resources available. The only advantage they have is a lack of intimidation.

Additional examples of students’ discussions are in the Appendices.

Students assumed more responsibility for the web-based discussion as the semester progressed and directed the discussion to classroom applications. At the beginning of the semester, the instructors posted questions for students to respond to. The majority of these prompts dealt with current events or with common readings that were assigned to both classes. By the fourth week of the semester, the students, however, began initiating their own writing prompts. The questions they posed to one another most often dealt with K-12 social studies classroom applications.

The online dialogue could be set up with another classroom across the country, or even in another country. The children could have specific questions given to them that they would have to answer daily, or better yet they could exchange questions and information that they (students) want to learn or know about each other. This could be wanting to know the weather, what their school is like, what their favorite games are, holidays they celebrate, current events in their area or just talking about issues of importance to the students. If you had the camera system, then the students could even see each other. By seeing each other, they could see how each dresses. They could even be able to see things that the students wanted to share with each other. This could include favorite toys, pictures of where they live and much more.

I have thought about the questions posed and responses given, and I feel that dialogue such as this is very important for both teachers and students. It is a non-threatening, risk-free way of determining what your students’ attitudes are toward certain subjects and issues. It is also a great way of figuring out what they have questions about, or interests in, for planning future lessons and experiences. In my classroom, no matter what grade I teach, I will have a “Question of the Day/Week/Month (whatever)” bulletin board for the same type of dialogue to go on. I think it will be question of the week, posted on Monday, and the
students will have until Friday to respond either by placing their responses in an envelope attached to the board, or writing in their journals. On Friday afternoon we will discuss. Those that wish to remain anonymous may. I will stress a risk-free, non-threatening environment to encourage sharing of ideas and feelings.

The most significant aspect of my participation with using the online dialogue was reading about how other people feel about issues. Being able to look at things from another person's standpoint and still being able to agree or disagree in a professional way.

The online dialogue also helped me see just how "real-life" social studies instruction and issues are. As a student, I never was a big social studies fan. I thought, like many people, that it was just a lot of history and old dead men. But seeing all of the real-life issues on the online dialogue, like the question posed about how to deal with the Clinton/Lewinski scandal with students, helped me see that social studies should be anything but boring for both the students and the teacher.

Students found the web interface easy to use, but felt constrained by the technical limitations. A technology specialist at the University of South Florida developed the web interface. It was user-friendly and allowed the students to focus on the discussion, rather than the dialogue. Despite the relative ease of applying this interface, students still discovered barriers and obstacles in using it. Their comments reveal their frustration with the technology.

The only barrier I found was in not being able to go back and look at the question posted. There were times in my communication that I needed to look at what was being asked again. It would be very helpful, at least for me, to have had the question available.

Some of my responses didn't show up, and I had to do them again. This was very frustrating.

Unorganized writings where I couldn't figure out what an entry was talking about until I read the whole thing. It
would be nice if each entry had a small abstract that we could peruse before reading.

One of the barriers I experienced was the shut down of the server at times. Another barrier I experienced was the amount of time it took to connect with the site. It was often hard to respond to the online discussion because it seemed like it was just a place for people to post comments rather than questions.

Recommendations

This study provides, in brief, an overview and analysis of preservice social studies teachers' experiences and perspectives of CMC. Studies on the application and effectiveness of CMC in teacher education have received little consideration, especially in the field of social studies education. The conclusions and recommendations here are preliminary and represent an initial step to begin addressing this void and to offer suggestions for future experimentation with new technologies. We have identified three recommendations that highlight the emerging knowledge of CMC applications in social studies teacher education:

• CMC should be an integral part of the curriculum.

• Instructors should initially facilitate the CMC, and then allow students to assume more responsibility for the discussion.

• Students should be given clear instructions and practice time with the new technology.

CMC should be an integral part of the curriculum. Student feedback revealed that students were most motivated to engage in the online dialogue when it connected to classroom readings and discussions. That is, they enjoyed discussing assigned readings with their peers at the remote location to gain perspectives beyond the students within their own class. By focusing the online dialogue on common assignments, students shared a collective self-reflection. Student feedback also revealed that students were more highly motivated to engage in the online discussion when the instructor connected their online comments to classroom discussion. This was done by the instructor either displaying the web page in the classroom and selecting individual contributions to begin class dialogue or by the instructor referring to
particular comments posted on the discussion page in class. Students felt validated by this connection.

Instructors should initially facilitate the CMC, and then allow students to assume more responsibility for the discussion. It was important for the instructors to initially engage the students in the online dialogue by posing questions and writing prompts and for the instructors to respond to individual student responses. Students felt validated and encouraged by the instructors' involvement. Within the third week of the CMC, however, students began to assume more responsibility for the discussion. At this point, instructors should minimize their prompts and allow for students to accept more responsibility for their learning.

Students should be given clear instructions and practice time with the new technology. Although, the web interface used in this study was user-friendly, students must be given clear instructions on the technical aspects of the interface. Students should also be given ample time to test the interface. Time invested in both instruction and practice will be well spent, for students will focus on their responses rather than the technology.

Conclusions

We have attempted to begin the exploration and understanding of the uses of CMC in social studies teacher education. Six inferences and three recommendations were developed from this study. Supplemental research studies are needed to further investigate the most effective applications of CMC in social studies teacher education. These studies should delve deeper into strategies for facilitating authentic and reflective dialogue among preservice teachers in geographically disparate locations.

Additionally, teacher educators should collaborate with computer programmers to design and develop a web interface that most efficiently encourages meaningful dialogue. It is imperative that teacher educators explore alternatives for CMC as new technologies are developed to best identify the interface most suited for teacher education.

Appendix

Students were also prompted to explore the notion of the Internet Paradox. The instructor's prompt read as follows:

A recent study in the American Psychologist found that increased use of the Internet was associated with declines in participants' involvement with family and friends and increases in their depression and loneliness. How do you balance this information with the value of exposing students to a tool that
provides access to a global forum of resources? What are our obligations to our students to safeguard their social competence and active contact with others? Student responses reflect the issues the students were grappling with.

**Sample Response 1**

Sometimes I'm just not sure how educational the Internet is. Although there are definitely good pages out there, I find myself wasting time waiting for pages to load and sifting through all the junk. Often I find myself resenting the time I have to spend doing this when it would seem simpler to call someone or read a book. Yes, it does open the world up greatly, but are we merely spending time on more superficial details than gaining anything real? I found myself playing solitaire for an hour on the computer last night. The whole time I was aware that I had work that I needed to do. I knew I could save the game or stop, but because it didn't even require physical involvement, or as time went by mental, I was able to forget that reality. I don't think that that is such a great thing. If I, a fairly disciplined person, cannot tear myself away to do something productive, how will a twelve year old do it? The computer sometimes is nothing more than a box to stare at.

**Sample Response 2**

I agree with Ron and Chris's views. The world of the Internet is unstructured. Most of the information there is unfiltered, not necessarily accurate, randomly thrown together, many times outdated, and sometimes dangerously misguided. The Internet can be a powerful tool if used in a structured and supervised manner, just as television or a power saw can be. But the Internet is not a pseudo-teacher, a babysitter, or a time-filler, any more than is the television or the power saw. Left in an unstructured and unmonitored state, the Internet can be as self-destructive as channel surfing on the TV, or as dangerous as unsupervised use of a power saw. Today, technology such as the Internet is simply thrown into schools and classrooms with little or no structural planning support. A few organizations are just now starting to organize the data into useful classroom activities, but there is very little currently available that I have come across.

**Sample Response 3**

Balance and appropriate supervision would be my suggestions. As my grandmother used to tell me, there is such thing as too much of a good thing. The Internet certainly has tremendous educational value, but its potential for addiction, overuse, abuse or whatever you choose to call it is just as tremendous. Students should, at school and at home, be educated in both the benefits and the costs of utilizing this resource. In the classroom, they can be encouraged to draw upon a variety of resources to gain information (e.g. interviews, photographs, etc.). At home students should also be encouraged to draw upon the resources of friends and family through real rather than virtual interaction. I firmly believe that parents allow their children too much access to the Internet—therefore guidelines should be established and parents need to sit and talk to their children about issues surrounding the use of the computer. As much as the Internet benefits our society, the consequences of unfettered surfing can be very damaging to our youth.

The introduction of controversial issues provided an opportunity for students to actively reflect on their personal values and assumptions about the teaching process while carefully considering alternative perspectives. The sample dialogue and responses provide an example of a discussion among students about insensitivity in social studies instruction.
Sample Dialogue
A recent incident in a Florida school resulted in the reprimand of a teacher for introducing literature that was insensitive to Jewish people and individuals with disabilities. As a teacher, how do you select material to avoid offensive content? How do you evaluate something to determine if it may contain information or statements that may be inappropriate?

Sample Response 1
I would like to think that most social studies teachers are careful and screen the resources that they distribute to their students for inappropriate or insensitive material. Blatant offensive materials should be avoided. However, there are times when “insensitive” material can be beneficial to students’ growth. For instance, a trip to the Holocaust museum can more effectively enlighten a student’s awareness of the prevailing prejudices and atrocities during WWII than an in-class lecture. I think it’s simply a matter of preparing the students for what to experience. Pre- and post-evaluation is essential for these types of “risqué” ventures. Then there are those times when a teacher just doesn’t know any better. Another respondent shared that one of their students found the term “Jew” offensive. I would never have known that. What now? For both teachers and students, we need to just learn from our mistakes and move on. Ignorance is cured by education. Hopefully, we will know how to apply that education.

Sample Response 2
Part of the job of a social studies teacher is to expose students to topics that are controversial and require thought. But the other half of the job is to give students the analytical skills to absorb this information, and draw their own educated, informed conclusions. If we only teach subjects that are tidy and neat, these students are going to have a real adjustment period when they are exposed to real world issues that are not cut-and-dried, and demand an opinion. I think teachers should broach these topics with extreme sensitivity, but they must not be eliminated because they don’t build students’ self-esteem. That’s not what teaching social studies is really all about.

Sample Response 3
This is definitely something important to keep in mind — never give your students something that you haven’t carefully read over yourself first. Look over any reading material carefully to make sure that it doesn’t have a tone or perspective that could possibly be offensive to your students. It might be a good idea to have another teacher or someone else look over it as well, if you think it might contain something potentially controversial. I also think it’s also important to always consider the source of the material and where you’re getting it. Make sure that it’s from a reliable source — some sort of book or production that you trust as academically sound. This is especially important when getting material off the Internet — there’s so much out there that it’s really important to carefully evaluate what you’ve got and how you’re going to use it as an instructional tool. If you do somehow give your students something that is controversial, it’s important to make it clear to them that this is just an opinion and not necessarily something that’s “true” or “right.” Encourage students to read with a critical eye and look for things like this themselves.
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Innovative Integration of Technology in an Undergraduate History Course

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Abstract
Schools of education are increasingly experiencing a demand to infuse technology into social studies methods courses to meet both national and state technology standards. However, since most preservice teachers’ coursework is taken in the arts and sciences, it is particularly important that these students experience effective teaching using technology in courses outside of the college of education (Cooper & Bull, 1997). Evidence suggests that one of the greatest challenges for college and university faculty is integrating technology into their instruction (Green, 1999). If preservice teachers only see technology utilized in their education courses, they are less likely to integrate technology in their future classrooms. This paper reports the results of a qualitative research study about the innovative and effective use of technology in an undergraduate history course. In addition, the paper provides a discussion of the implications of the strategies utilized in the course for social studies teacher education.

Introduction

The National Council for Accreditation of Teacher Education (NCATE, 1997) and the International Society for Technology in Education (ISTE, 1999) have reported that schools of education are not adequately preparing preservice teacher education students to effectively integrate technology in their future classrooms. Consequently, teacher education faculties across the nation are adding technology components to their courses and are participating in technology training. Their objectives are to become better equipped to model effective integration of technology and to attempt to keep up with this “constantly moving target” (Cooper & Bull, 1997, p. 97).

Because most preservice teachers’ coursework is taken in the arts and sciences it is imperative that these students experience effective
teaching using technology in courses outside of the college of education (Cooper & Bull, 1997). Considering that most teachers teach the way they were taught, the question arises as to how technology is being integrated in the arts and sciences, particularly in the social sciences, an area that does not traditionally embrace technology. According to Martorella (1997), "technology is a sleeping giant in the social studies curriculum" (p. 511). Thus, technology also may be asleep in post-secondary history courses since many of these are taught using traditional modes of instruction in which professors lecture and use limited technology (such as an overhead projector) with very little student interaction.

There have been calls to reform schools of education as well as post-secondary instruction. Consequently, many post-secondary institutions are undergoing transformation (Kovalchick, 1999; Person, 1994). An underlying premise in this reform is that technology can promote changes in instruction and learning. Barr and Tagg (1995) contended that “[a] paradigm shift has taken place in American higher education...Subtly but profoundly we [have shifted] to a new paradigm: A college is an institution that exists to produce learning” (p. 12). In this “learning paradigm” there is a shift from the passive learning that occurs in traditional lecture courses, to more active learning where “students must be active discoverers and constructors of their own learning” (p. 21). The learning paradigm is constructivism. “Central to the vision of constructivism is the notion of organism as ‘active’—not just responding to stimuli, as in the behaviorist rubric, but engaging, grappling, and seeking to make sense of things” (Perkins, 1992, p.49). In this sense, the roles of teachers and students shift: the teacher provides guidance about process as well as content and students manage their own learning about process and content.

In 1998, the American Association for History and Computing (AAHC) surveyed history professors about their computer usage (Trinkle, 1999). Trinkle reported that “computer technology has gained an established place in the practices of history” (p. 1). Trinkle’s report, however, raises questions about how history professors are using technology. It seems quite apparent that they are using technology for personal productivity and communication, resulting in little impact on instruction. While 80 percent of the history professors surveyed reported using technology in teaching, how they applied technology in practice was unclear. There is a clear distinction to be made between using technology to do what we have done before (to lecture and present projects) more efficiently and integrating technology to reformulate the teaching of history so that students are learning in new and innovative ways (see Privateer, 1999). A smaller group of faculty, Trinkle found, are using technology to allow students to “find and evaluate materials on the Internet,” and “creating web sites to
help guide students to dependable online materials and provide other useful resources" (p. 2). In addition, some are producing “sophisticated historical databases” (p. 3). It is one thing to ask students to use multimedia resources to present information and another to have them use technology to conduct historical research as well as present it. What is masked in these survey results is the work of pioneers who are using technology to rethink how history is taught, who are using technology to construct content in new ways.

Some history professors across the nation are beginning to take advantage of the wealth of digital resources now becoming available to them through library collections and the World Wide Web (WWW). Some, such as Roy Rosenzweig (see http://historymatters.gmu.edu) from the Center for History and New Media at George Mason University (see http://chnm.gmu.edu), and Dennis Trinkle at Depauw University who is also the executive director of the American Association for History and Computing (see http://theaahc.org), are using technology to transform their classrooms by providing students with the opportunity to interpret social science knowledge in constructivist ways.

For example, Trinkle who teaches history courses in a multimedia classroom, has students participate in telecollaborative guest lectures, create multimedia presentations in lieu of a final paper, and access course resources online. The telecollaborative guest lecturers broaden students’ perspectives by providing students with information about the lecturers’ real-life experiences. Trinkle sends a digital camera to the guest lecturer along with instructions on how to use it. Then the guest lecturer speaks to students and answers their questions from anywhere in the world.

At the University of Virginia, two history professors have introduced the use of technology, specifically the WWW, into a history classroom that has traditionally been taught in a lecture format. In the course, students created web sites that organized and presented primary sources of information, such as letters, diaries, and photographs, about the Civil War. This study explores the digital history course taught in spring 1998. The course is an example of how technology can be used successfully in university humanities and teacher education courses. The study examines the following:

1. How does technology act as a catalyst for constructivist learning?
2. What are the roles of instructors and students in the learning process when the World Wide Web (WWW) is used to present historical narratives?
3. What does it mean to “do” history?
Research Methodology and Methods

The paradigm for this study is interpretive inquiry (Erickson, 1986). This framework was chosen because of the researchers’ assumptions that social and educational reality is multiple and complex. The main epistemological and methodological assumptions of interpretive inquiry are a focus on meanings and patterns of meanings reflected in social interaction, and the interplay between such interaction and the wider social context in which it occurs. In such inquiry, the objective is to answer (or to discover and analyze) what is happening from the participants’ points of view and to make sense of the patterns of meaning held by the various participants.

The conceptual framework used for this study was symbolic interactionism (Blumer, 1969). Symbolic interactionism rests on three primary assumptions: 1) human beings act toward things on the basis of the meanings that things have for them; 2) the meanings of things are the product of social interaction; and 3) meanings change when self-reflective individuals symbolically interact with each other (Denzin, 1992). This approach applied to the study of teaching and learning defines each classroom as a culture created by students and teachers as they interact over a period of time. A symbolic interactionist investigation into technology and instruction seeks to find out how meanings and definitions get worked out in practice and how the classroom works (Bolster, 1983).

Course Context and Setting

The genesis of HIUS 403, Digital History and the American Civil War, was the result of a University-wide Teaching and Technology Initiative (TTI) fellowship. The TTI fellowship, developed at the University of Virginia to encourage professors to use technology in innovative ways, provides professors with both financial and personnel support to incorporate the use of technology in their classrooms for a one-year period. Faculty members submit a proposal describing their needs and objectives for incorporating technology into their classrooms; if awarded, they are expected to share their experiences as well as write a final report. In this case, two history professors were awarded a TTI fellowship to co-teach a course in which students would gather primary data and present their interpretation of an assigned topic on the WWW. The idea for the course arose from the professors’ involvement with the Valley of the Shadow (http://valley.vcdh.virginia.edu), a web-based archive of “every available piece of information about two opposing communities from 1859 through the Civil War” (Shea, 1998).

According to Ayers and Thomas (1998, p.1), “the main goal of the class was to understand what history looks like in the new me-
dium of digital technology and to create a digital history project that would meet traditional expectations of scholarship, craft, and integrity.” The course description from the syllabus provides the overview of the class:

In this course, students will investigate the possibilities of writing digital history of the American Civil War. Using resources of the Valley of the Shadow project, students will be able to have quick access to original records and sources. On research trips to archives and using microfilm resources at Alderman Library, students will collect, examine, evaluate, and integrate primary sources on the Civil War. They will collaborate in teams of four to build a digital history web site on the Civil War. Individually they will keep journals on their experiences, focusing on the limitations and possibilities of digital history.

A variety of technologies, many of which the students had not encountered previously, were utilized in the course. Students digitized photos, acquired information and photos from CD-ROMs, and learned to use graphic software to modify digitized images and to create images for their web pages. Students transcribed handwritten letters into a web-based form that was created by the Electronic Text Center, whose purpose is: “to build and maintain an internet-accessible collection of standard generalized markup language (SGML) texts and images and to build and maintain a user community adept at the creation and use of these materials” (http://etext.lib.virginia.edu). Also, students learned to write hypertext markup language (HTML); one group learned SGML. Some students, moreover, created web-based, searchable databases. The majority of the technology learning occurred outside of classroom meetings. Only two classes were dedicated to learning how to use technology. Most of the other classes were open-ended “workshops” in which the professors were available to help students with their projects. Some of the topics discussed in class were group progress, historiography, presentation of research, questions, and strategies for planning and organizing group responsibilities and deadlines.

The setting for the course was a Macintosh laboratory classroom at the University of Virginia. The lab housed nineteen PowerPC's, an instructor's station, a projection system, and a laser printer. However, students spent numerous hours outside of class conducting research at the National Archives, locating sources in other libraries in North Carolina, Pennsylvania, and Virginia, transcribing letters, digitizing photos, and developing their web sites.
Participants

The participants in the study were students and professors of an undergraduate history course conducted in an instructional computer laboratory at the University of Virginia. The course was co-taught by a tenured professor, on sabbatical for the semester, and the project director of the Valley of the Shadow. The tenured professor had taught at the university for 18 years whereas the project director had over ten years of high school teaching experience and four years of teaching in higher education.

There were twelve undergraduate students including, one sophomore, four juniors, and six seniors. Seven were history majors, one was a history minor, and the others were economics, engineering, government, and mathematics majors, including one non-major. Of the history majors, two were majoring in another discipline, and one was minoring in another. Four of the students were female, while the remaining eight were male. One of the female students also was enrolled in the University of Virginia’s Curry School of Education. The Curry School offers a five-year teacher education program in which students earn a bachelor’s degree in an academic major as well as a Masters in Teaching. Nine of the students owned their own computers. The students’ level of self-reported technology experience prior to participating in the course varied as shown in Table 1.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Occasionally</th>
<th>All the Time</th>
</tr>
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<tbody>
<tr>
<td>I use e-mail</td>
<td>1</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>I read newsgroups</td>
<td>8</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>I surf the Web</td>
<td>1</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>I write HTML</td>
<td>5</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
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The professors directed students to work together in groups of four on a collaborative semester project. There were three possibilities to choose from: Letters and Diaries of the Civil War from Franklin and Augusta, The Franklin Home Front, and The Freedmen’s Bureau in Augusta County. Some of the students chose their group/topic,
whereas others who enrolled in the course later were assigned groups/topics.

Data Collection

A number of strategies were used for collecting data. The two primary methods of data collection were classroom observations and interviews. One of the researchers observed ten out of fifteen class meetings—most of which lasted about three hours. During these observations, the researcher wrote field notes and later typed the notes into a word-processing program. Observations totaled about 25 hours. Interviews were also conducted. All twelve students and both professors participated in an interview with the researcher at the beginning of the course. Seven students and the project director of the Valley of the Shadow also participated in a post-interview. Interviews, lasting between fifteen and sixty minutes, were taped and transcribed. Other forms of data included: students' online journal entries, the course syllabus, the course web site, the TTI fellowship proposal, the TTI final report, journal articles about the class and the Valley Project, and the actual web sites that students created collaboratively.

Data Analysis

Analytic induction (Erickson, 1986) was utilized as the primary method of data analysis in this study. It involves the formulation of empirical assertions—conclusions or statements about the data describing what is happening. These assertions in turn must be confirmed or disconfirmed by a search for empirical warrants. Warrants are generated through repeated readings of the data and testing the validity of the assertions, often modifying them to reflect the data. From the analysis of data a set of empirical assertions were formulated and warranted. Assertions are presented in the Discussion of Findings section along with exemplars from the data and accompanying descriptive and interpretive commentary.

Discussion of Findings

While the study initially focused on how the use of technology affected the roles of both the instructor and the students in the digital history course, it later broadened to include the role of technology in redefining the curriculum from learning about history to "doing history." "Students worked collaboratively to create web sites (see Brownfield, Hwang, Picou, & Santarelli, 1998; Crocker, McMurphy, Tran, & Doshi, 1998; Freed, Richardson, Kelly, & Sensoy, 1998) using primary source data, which they collected and researched, on one of
three topics. The table below outlines the series of assertions that were warranted through analytic induction.

<table>
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<th>Assertions</th>
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<tr>
<td><strong>Assertion 1:</strong> Professors actively seeking to reform instructional practice found a powerful ally in current technologies resulting in meaningful, constructivist student learning experiences.</td>
</tr>
<tr>
<td><strong>Assertion 2:</strong> Technology affected the roles of professors and students by shifting the center of attention from the instructor to the students and the technology being utilized, fostering the social construction of knowledge.</td>
</tr>
<tr>
<td><strong>Assertion 3:</strong> Technology, in a variety of forms, facilitated the shift from students as passive receivers of authoritative knowledge to students as active constructors of knowledge who conducted historical research (who &quot;do history&quot;).</td>
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</tbody>
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Assertion 1: Professors actively seeking to reform instructional practice found a powerful ally in current technologies resulting in meaningful, constructivist student learning experiences.

The professors of this course were actively involved in exploring the possibilities of digital history. In essence, they were involved in reforming their teaching practice with the assistance of the TTI Fellowship. Throughout the course, the professors learned that technology fostered and promoted student learning in ways that were incomparable to their previous experiences teaching traditional lecture courses. The professors found that the use of technology meshed well with the changes they wanted to make resulting in powerful learning experiences for all involved.

Rather than asking students to conduct research on their own and present their work in the form of a term paper (whose only audience would likely be the professors themselves), the professors required students to work collaboratively in groups to build a WWW site using primary data. Students needed to find, collect, and interpret primary source data (with financial and technical support and guidance), and then digitize the data so it could be accessible and presentable on the WWW.

During many of the class meetings, the groups were asked by the professors to present their progress on the projects. The following vignette presents two abbreviated discussions about how students in the Letters and Diaries group grappled with the interpretation and
presentation of the letters and diaries of the Civil War soldiers that they had read.

Vignette 1: Interpreting Letters and Diaries

March 18, 1998, 4:37 p.m.
The three groups have just come back from break. Each group had been asked by the professors to present their progress to the class. Alex, from the Letters and Diaries group, volunteers his group to present first. Alex, Brian, Dan, and Crystal walk to the presentation computer at the front of the computer lab.

Alex says that he would like to start by talking about McPherson's (1997) interpretation of the letters described in his book, For Cause and Comrades: Why Men Fought in the Civil War. He says, "McPherson presents a different view about the soldiers from what we have found."

Brian cuts in, "What we've found is that people are writing about the same things we'd be interested in such as home, family, friends, and paying bills. Here's a line from one letter I transcribed last night: 'No place is as warm as by your side.' In Frank Rankin's diary, there were hours and hours of boredom punctuated by extreme terror. They wrote to keep themselves sane. I haven't found anything about an ideological cause that McPherson talks about, most have been about the battlefront and sending messages."

April 8, 1998, 3:47 p.m.
Crystal, from the Letters and Diaries group, says: "We're transcribing 100 letters. We're going to set up an index to search for words. We're still working on 1) The 'take' (interpretation) we are going to use, and 2) How we are going to make our 'take' known. We want to have a real simple splash page to introduce our themes.

Dan continues, "We're also trying to figure out if we should connect the letters and diaries. Letters are written for a certain person; diaries are very personal and written for that individual. And, we've found similar themes, too."

This vignette demonstrates how students wrestled with interpreting and reporting historical data in a cohesive, understandable manner on the WWW. Also, the vignette shows what happened dur-
ing most of the classes: Students talked about their progress and tried to find solutions to questions they had.

In order to locate and digitize many of their sources, students had to master the use of a variety of technologies: CD-ROM’s, electronic mail, databases, digital cameras, graphical and word-processing software, different operating systems (Mac, PC, Unix), and scanning equipment. Further, students had to rely upon their group members, and also upon a variety of other people and resources to create their sites: the professors, other historians, technology professionals, and library staff. Thus, students participated in a constructivist learning environment where they managed the complexities of finding primary sources, analyzing historical data, and presenting them through the WWW, which is a very complex process, as a professor explained:

Doing history yourself is actually investigating the past and looking into these questions and coming up with some kind of interpretation. It involves confronting all of the complexities, all of the missing pieces that you can’t put together necessarily in a neat and tidy way. And yet at the same time, coming to some kind of interpretation, some kind of closure, some kind of story...they’re more connected than they have ever been to the primary sources...They’re more aware of the process of doing history themselves because they actually not only have to do it, but they have to present it. If all you have to do at the end of the term is present a research report to a professor then the stakes are different. [Professor1-Interview]

Indeed, finding, interpreting, and putting all of these pieces together was very difficult for most of the students, even for those comfortable and confident with using the technology. While the use of such technologies can provide meaningful learning experiences, it also can be very demanding, requiring a great deal of time, effort, coordination, and knowledge about the medium. Frustration and stress were often cited as feelings students experienced in the learning process, as the following illustrates:

The frustration in all of this lies with the first attempts to ascend this mountain. To begin drawing the first parameters of the project, and decide, out of this mountain of information, what to include, and further, what to do with it after that. [Student 11-Journal Entry]

This journal entry illustrates how students grappled with interpreting and reducing historical data for presentation. Also, it describes
some of the students' responsibilities, all of which are representative of tasks in a constructivist learning environment in which learners "make tentative interpretations of experience and go on to elaborate and test those interpretations" (Perkins, 1992, p. 49). The tasks are not passive tasks, but active ones that involve skill and higher order thinking. Creating web sites, although frustrating and overwhelming, provides students with a way to interpret and present their learning to a wider audience.

For these professors involved in reforming instructional practice, technology offered a powerful avenue for active forms of student learning. The WWW in particular provided a demanding, open-ended environment for students to "do history." It was a meaningful, constructivist learning experience in that students interpreted and presented their subjects, and assembled all of the pieces (census data, databases, diaries, images, letters, text) into one web site that had a consistent theme. Students had to master the history and the technology simultaneously to present their findings in a cohesive, understandable way. In sum, professors used technology to reform their own teaching practices, and consequently, changed how students learned and interacted in their classrooms in ways that lecture courses do not allow.

Assertion 2: Technology affected the roles of professors and students by shifting the center of attention from the instructor to the students and the technology being utilized, fostering the social construction of knowledge.

The use of technology in this course, particularly the WWW, shifted the center of attention from the professors to the students and the technology being utilized. The shift put the professors in the position of guide or coach, rather than the traditional teacher who lectures to students about a topic. The professors did not teach any specific content; instead, they provided students with guidance and pointed them to appropriate resources. As one professor put it: "I'm a guide here, explore the past for yourself, feel the rush of making the connections yourself" (Professor 2-Interview).

The professors' position clearly was not the same as traditional professors. The use of technology enhanced their facilitator roles because they were not in a position to play the traditional teacher role providing students with all of the answers about each topic. As a result, students viewed their professors as collaborators of learning rather than "sages on a stage," as one student indicated:

They're facilitators of our class. They poke at us, they challenge us, they try to come up with some basic ideas without pressuring us; they provide a framework for us to be creative. They've given us some information, they've given us some leads but kind of are letting us take it to
where we want to go with it. They steer us in the right direction, keeping us in a general path, but I think we're quite free to go where we want with it...I think they facilitate our discussion, our research, you know, our teamwork, all the things I think combined and they're responsible for making sure that we're gonna get our project done, even though they don't really oversee us...I don't see them really as being instructors, you know, I don't feel like I'm, no offense to them, I just don't feel like I'm learning from them per se. [Student 4-Interview]

In the Digital History course, there was a wide range of technology experience among the students (see Table 1). However, all of the students were aware that they would use technology to complete their projects. In a sense, exploring the use of technology was the “point” of the class. In addition to varying levels of technology experience, students also were required to work collaboratively in groups of four. Although the professors were content experts in Civil War History, they were not experts in the topics that students were researching. Moreover, while the professors were technologically adept, they relied on other technology professionals and resources in order to meet the students’ needs. Therefore, students could not rely solely on the professors to provide them with everything they needed to know or do.

Even the professors recognized their roles were different, and noticed themselves playing the “facilitator.” One professor remarked:

The course required much more coaching than it did instructing. And that’s a good thing. I think we need that in higher ed and I think we need it in education more. Better coaching. Because that perspective understands that the student is an independent learner and participant in all of this and not just a receptor of instruction. [Professor 1-Interview]

Both the professors and the students had no clear picture of exactly how these projects would turn out especially since the construction of these sites was in the students’ hands. The professors taught the process of conducting historical research. They provided guidance, encouragement, and support. Hence, the emphasis moved from the professors to the students and what they could do using the resources and technology. The use of technology and the collaborative structure of the course also fostered the social construction of knowledge. Students did not learn the history or the technology alone, but through interaction among peers, professors, and other historians. Technol-
ogy promoted the social construction of knowledge because it was used as a means for students to collect content data, analyze the data and communicate what they had learned and were learning. Electronic mail was used quite a bit to share ideas between students and the professors as well as to schedule meetings. Through all their interactions, students learned a great deal from each other. There was so much research to be done, information to be read and interpreted, and countless hours of digitizing materials that they had to rely upon one another for instruction and division of labor.

Students' responsibilities were different than that encountered in traditional history courses. Rather than simply acting as isolated receptors of historical fact, in this course students were generators of content knowledge collaboratively working in teams, relying on each other's expertise, and working toward a common goal. One student compared his role to a colony of bees, working on building a hive together. This analogy emphasizes how students perceived themselves to be socially constructing their sites and learning from each other. Student interaction was required for project completion. One of the professors described how technology enhanced student learning:

The students are active participants in the whole project. They are the leaders really of the project. They own it. It either succeeds or doesn't on their shoulders so they become less students and more workers. It's almost a Deweyesque student as worker model...Students...take an odd ownership role over their projects. [Professor 1-Interview]

The significance of the course was not limited to the academic and technical. Students also learned about themselves and working with other people. While it is clear that students experienced difficulties working together it is evident that they benefited from the experience as well. One important point made by a student is that history majors rarely have the opportunity to work in a group for any extended period of time beyond class discussions. This is probably the case with most liberal arts majors. The workforce of the Information Age needs decision-makers that can work in teams, relying on others to problem-solve and find solutions. Yet all six seniors in this particular course were about to graduate without ever having worked on an extended group project in their entire undergraduate careers. One student observed the importance of skills learned through group work:

I learned a lot. I mean I really never worked in a group setting like this so I definitely learned how things work.
how you get people to do stuff and what you can expect of some people and what you can't. [Student 2-Interview]

The non-academic, real-world life skills that resulted could not have occurred if students had worked alone rather than in groups to create their WWW sites.

While the benefits of group work were evident, it did not mean that problems did not exist or should be ignored. All of the groups in the course chose to work out their own dilemmas, without the professors' intervention, although many students wrote about difficulties with their peers in their journals. The comment below demonstrates how troublesome group dynamics can be:

I was just like "no, I think, I mean we're gonna have to do it. We're gonna have to work it out." And it is one of the experiences that you carry away from the class and I think it's one of the most important experiences because most history majors, they don't work with anybody at all. They discuss in class but actually doing the work, they don't work with anybody at all...Actually working with three other people with very different personalities and struggling through it and depending on them for his work. [Student 6-Interview]

The use of technology for collaborative research projects can have far-reaching benefits for students, beyond the academic. Students completed the digital history course with increased research, technical, and inter-personal skills. Not only did students learn about how to find an image relevant to their topic, but also how to position the image on a web page and how to come to a consensus about where to put that image. In addition, they further developed the skills necessary to function in a group: division of labor, communication skills, patience, and diplomacy. Also, they learned to share ownership of the project and to rely upon one another for getting the job done. Although group work is rare in the liberal arts, it appears that more professors should be incorporating it in their courses.

Assertion 3: Technology, in a variety of forms, facilitated the shift from students as passive receivers of authoritative knowledge to students as active constructors of knowledge who conducted historical research (who "do history").

In this course, students used technology to 1) collect data, 2) interpret data, and 3) present their findings. In the process of conducting research and converting their data into digital form, students learned how to apply technology in learning processes, they learned how to conduct historical research or how to "do history", and they
learned about the process of interpreting history, all more significant to them than learning dates and figures. According to one professor, “doing history,” means

[Taking] inchoate, unorganized, raw material to find meaning in it. As far as I can tell, that’s all doing history is. And my objection to the way most history is taught is that people are never shown the inchoate part and never, therefore, are given the chance to do history. They’re given the chance to memorize somebody else’s done history....In many ways this is more, even though it uses machinery, it’s more tactile, you actually have to go get all these things and actually drive across the landscape and go into the archives and get them and then manipulate them. It feels more like doing history than using some set of published books in the library. [Professor 2-Interview]

In many undergraduate history courses, students do not have the opportunity to “do history” because they spend most of their time listening to professors lecture and researching secondary sources in which the interpretation of history has already been done for them. Also, in most history courses, students have little or no interaction with historians in the field. In the digital history course, however, students had the opportunity to conduct historical research, which simply involved doing what historians do. Also, for these students, “doing history” involved communicating and acquiring primary data from a variety of experts. Besides working with their professors and peers, students communicated with historians and representatives from the following organizations: the National Archives, the National Park Service, the National Military Park, the Alexander Mack Library at Bridgewater College, the Staunton Historical Society, the Staunton Public Library, and Mary Baldwin College. The TTI fellowship supplied the funding for the trips out of town.

Throughout the semester in the digital history course, students were actively engaged in learning, researching, and piecing together their topic to tell a story; in other words, they were “doing history” rather than passively regurgitating recycled information. Although students completed a limited amount of secondary source research using other historians’ interpretations of their topics, emphasis in the course was on the students’ interpretations of history based on their primary research. While the professors “gave [students] the basic subject, some of the raw material, technical help, guidance in the discipline, and abundant support,...[students] had to define the essential nature of the final product” (Ayers & Thomas, 1998, p. 6) themselves. Technology assisted students to “do history” in a way that traditional
course processes did not allow. For instance, students were able to compile all of their data into one site, accessible by many. Their sites included photos, census data, newspapers, letters, and diaries. If these had been presented in paper format, others would not be able to conduct searches of the census data or the newspapers.

In the process of learning how to use technology effectively, students came away with a good grasp of the history, as a student wrote:

I have learned a great deal about HTML, but also about the common man in the Civil War. The letters we read weren’t about causes or politics, but about how the simple man dealt with the “horrible machine” of war. Having to close early because I’m getting kicked out of the lab, I have to end with the thought that no matter how high tech history gets, it will never be able to take away what really affects us about the war—the fact that people just like us, and soldiers my age, endured the hardship of war, and made the United States in America, the United States of America. [Student 11-Journal Entry]

In this sense, “doing history” goes beyond just finding the sources, it entails sifting through that information and forming an interpretation of it. In sum, as one professor put it, “History needs to be about ‘doing history’ yourself as a student, and the multimedia environment allows that like never before.” [Professor 1-Interview]

Conclusions

Trinkle (1999) reports on a variety of inappropriate approaches to integrating technology into the teaching of history such as distance education, administrative directives to employ technology, insufficient resources, etc. Faculty are concerned that technology is being imposed without “regard for its impact on teaching and learning” (p.3). The results of the present study portray potential ways to productively integrate technology into the teaching of history. It illustrates Trinkle’s optimism that technology has the potential to change dimensions of history “from the structures of historical knowledge to the paradigms of pedagogy” (p.3).

The roots for constructivist reform have been planted. However, professors need to be supported with the appropriate resources as a condition to facilitating the integration of technology in constructivist approaches to teaching and learning. This study serves as an example of the challenges and rewards of pursuing such a course of action. The time and resources necessary should not be underestimated, nor
should the learning outcomes. Both the professors and the students were given time, resources, and support to carry out the objectives of the course. Students had two professors guiding them, access to a multitude of high-powered computers, staff who helped them digitize sources, and funds to pay for travel, phone calls, and copying materials. In addition, the class size was very small, with only twelve students.

The WWW supported the professors’ roles as facilitators and students’ as generators of learning, marking a shift towards the learning paradigm described by Barr and Tagg (1995). In this paradigm as in the digital history course, students manage their own learning: The image of the student-as-repository of knowledge is replaced by an image of the student as constructor-of-knowledge and master of process. The professors viewed themselves as facilitators, as did the students in the course. Such changes are not easy. They go beyond the requirement of a change in instructional practice; they also require the rethinking of one’s educational philosophy and belief about learning and teaching.

This study, moreover, demonstrates how technology’s role is not neutral in instructional reform—it is dependent on the instructional beliefs that instructors hold and the availability of the necessary technology and institutional commitments to such reform. Just using technology or seeing it modeled by liberal arts professors is not enough. Both students and professors must utilize technology in meaningful ways. According to Rose and Fernlund (1997), “powerful social studies teaching and learning is achieved when it is: (1) meaningful for teachers and students, (2) integrative, (3) value-based, (4) challenging, and (5) active” (p. 165). Few would argue that the digital history course did not meet these criteria.

The professors could have applied technological resources to improve the presentation of material to students. They could have constructed web pages as more effective repositories of authoritative facts and knowledge. However, the professors took a different path to innovation with technology. Not only did these students learn how to conduct historical research, a skill often left to graduate studies, but also they wrestled with working in a group, managing time, and mastering the “how to” aspect of using the technology. Yet, the use of technology was almost seamless in the course. Building skill in the use of technology was not the primary intent of the course professors, but it empowered students to “do history” in a way that a traditional lecture course can not. Students actively learned to “do history” like historians and discovered the potential of using a variety of technologies to create it.

While some professors might be wary of “jumping onto the technology bandwagon,” McMichael (1998) contended that the World Wide
Web is an ever-expanding fact of the historians' existence, and one with which [historians] need to come to grips” (p. 32). As one student explained:

I find myself reflecting upon the old adage that you can’t teach an old dog new tricks. I am thinking of the old dog being history and digital history being the new trick. Many people believe this can’t be done, but I think [our group] accomplished just that. [Student 11-Journal Entry]

Technology is being used to reinvent and re-engineer what liberal arts professors do, to facilitate learning in ways more relevant to students living with the new demands of a global economy. When faculty are encouraged to innovate and are supported with adequate resources, technology serves as a powerful tool in the reform process. The challenge now is to find connections between technological innovations in the liberal arts and teacher education.

Implications for Social Studies Teacher Education

This study is important for social studies education for a number of reasons. First, in general, it highlights the dynamic and evolving relationship between content, pedagogy, and technology. Adding new technologies into the equation facilitates a reexamination of the whole purpose and process of teaching and learning at all levels of the educational system. We can do things in classrooms that were not possible before the advent of digital technologies. What does this mean for other content areas such as government, sociology, psychology, and geography? Can we use digitized content and other technologies to teach students how to "do" sociology, psychology, or geography as undergraduates?

Second, if more social science courses involved meaningful uses of technology, more preservice teacher education students would learn how to reconceptualize disciplinary content and utilize technology to effectively teach content. Third, social studies teacher educators could use the model of technology integration and constructivist pedagogy represented in this study to redesign the teaching methods course. If preservice teachers were exposed to effective models of technology integration in both their content area courses and their teacher education courses, they would be better prepared to integrate technology in their elementary and secondary classrooms.

Social studies education programs must now begin to think about how they will build bridges from reforms in the liberal arts to content area methods courses. One might ask how various technologies can be used to enhance or reform methods of teaching social studies con-
tent, such as the Civil War, using such methods as lecture, discussion, inquiry-based learning, problem-solving, cooperative learning, etc.

The University of Virginia’s Curry School of Education, recognized for its leadership in integrating technology for over a decade, has been participating in a number of endeavors with numerous partners to more effectively infuse technology into its instructional program. An overarching principle of these innovations is that technology should be one component of a content specific approach to reforming content area methods courses. It is in the content area methods course where students learn innovative methods to teach content through a variety of pedagogical approaches. The Curry School and its partners have teamed up with the Virginia Center for Digital History (http://vcdh.virginia.edu) at the university to produce and disseminate digital history resources as well as to develop lesson plans and approaches for high school and college instructors to better use these materials.

Note

1 We wish to thank Professors Edward L. Ayers and William G. Thomas, III for opening their class to us. Also, we wish to thank the students for their participation in the study. For a glimpse of all of the student projects that explore Digital History and the American Civil War, please see: http://jefferson.village.virginia.edu/vshadow2/projects/projects.html

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Abstract
This paper presents a study of the benefits and obstacles perceived by preservice teachers when considering the use of computer technology in social studies classes. We chose a purposive sample of education students who are in programs at technology rich institutions to begin exploring how emerging teachers would define the benefits and obstacles. We review existing research on teachers' attitudes toward technology, the barriers to technology use, and factors that facilitate technology integration. We then share our own findings, which include preservice teachers' perceptions of the benefits and potential downfalls of using technology. We identified five perceived benefits: data collection; improved student computer skills; dynamic sound and images; instructional variety; and communication tool. Obstacles include: accessibility; differing ability levels; dependability; and supervision of students. A discussion of the juxtaposition of these benefits and obstacles, and the implications for teacher educators is presented.

Computer technology is viewed as an appropriate and exciting way to enhance social studies instruction in K-12 classrooms. Although the research base in this area is building, there are relatively few studies of how preservice teachers view the integration of technology for their future classrooms. In this article, we present a new study of preservice teachers' perceived benefits and obstacles for using computer technology in social studies classes. We chose a purposive sample of education students who are in programs at technology rich institutions to begin exploring how emerging teachers would define the benefits and obstacles.

In the following sections, we review existing research on teachers' attitudes toward technology, the barriers to technology use, and factors that facilitate technology integration. We then share our own
findings, which include preservice teachers' perceptions of the benefits and potential downfalls of using technology. We found that although our students were excited about integrating computers into their classrooms, they had several concerns about doing so. A discussion of the juxtaposition of these benefits and obstacles, and the implications for teacher educators is presented.

Literature Review

A growing number of manuscripts on teachers' use of computer technology helps us to frame our thinking about this topic. In this section, we review research on teachers' attitudes toward computer technology, studies of factors detrimental to computer technology use, and reports of the factors that enhance the use of computer technology.

Attitudes Toward Computer Technology

In an attempt to discern the factors that support and inhibit teachers' use of computer technology, a number of researchers have examined attitudinal factors. There is disparity in the reported attitudes toward computer technology, with some researchers finding teachers to be positively disposed to its use, and others finding negative attitudes. In a survey of 33 K-5 teachers, Cummings (1998) found that most teachers did not enjoy using computers for instruction, although two-thirds reported that they did integrate computers into their teaching. Teachers in that study reported they knew enough about computer technology to use it, but only 25% of the sample indicated they liked teaching with computers. Cummings found that in the elementary grades, teachers were less likely to use computers for social studies instruction than for instruction in other disciplines, while in the upper grades the reverse was true.

Other researchers found that a feeling of self-efficacy as a computer technology user was an important factor in teachers' decisions to integrate technology (George & Camarata, 1996). In a study of 222 preservice teachers, Kellenberger (1996) determined that computer self-efficacy is a product of perceived past computer success and the personal value teachers place on the contribution of computers to instruction. It may be that the most important attitude to encourage the adoption of computer technology, however, is a teacher's interest to do so. In case study reports of teachers who adopted computer technology, a strong interest in using computer technology outweighed both limited knowledge and low confidence in technological capabilities (Gibson & Hart, 1997; Ropp, 1999).

Some researchers have reported that increased training in computer technology may not be enough to overcome an initial negative.
predisposition to its use. Ropp (1999) reports one case in which increased exposure to using computer technology exacerbated anxiety about using computers in the classroom. Bradley & Russell (1997) also reported that computing competence and anxiety are highly correlated. Further, the quality of computer experience is important; bad experiences with computer technology may increase phobias about using it. (Rosen & McGuire, 1990).

Two reports of student teachers indicate that new teachers have positive attitudes toward computer technology. In a reported study of 110 student teachers, Wang and Holthaus (1997) found that 43% of the student teachers thought computers were important. Further, 32% strongly agreed and 62% agreed that teaching effectiveness is increased through computer integration. Marcinkiewiez (1996) reported that student teachers had high expectations of future classroom computer use, but that the optimism quickly deteriorated during the first year of teaching.

**Barriers to Computer Use**

In attempts to explain why more teachers are not using computer technology, several researchers have reported a variety of reasons. Often, a lack of hardware and software automatically preclude the integration of computer technology (Abdal-Haqq, 1995; Wang & Holthaus, 1997). In addition, teachers report they lack the adequate training or long-term support in computer technology use (Abdal-Haqq, 1995; Bradley & Russell, 1997; Chin & Hortin, 1993; Gibson & Hart, 1997; Randall, 1996; Topp, 1996). A lack of time is also reported as a barrier to using computer technology in the classroom, including needing training time, and time to find resources and prepare curriculum (Cummings, 1998; Gibson & Hart, 1997). Finally, it has been suggested that some teachers refuse to implement computer technology because computers compete for students’ attention. The learner-directed computer environment is in accord with the constructivist perspective, and some educators reject this philosophy in favor of the traditional teacher-centered classroom (Hannafin & Savenye, 1993).

**Factors that Facilitate Computer Technology Use**

Studies of teachers who frequently integrate computer technology and school systems that report high use offer some insights into how to support teaching with computer technology. Having the hardware and software available are critical components. In Becker’s (1999) nationwide study of teachers, 90% of the teachers who had access to the Internet rated the World Wide Web and e-mail as essential assets to their teaching. Sixty-eight percent of the connected teachers reported using the Internet to find teaching resources, 30% for student research projects, and 7% for student publishing. Merely having the capabili-
ties, however, might not be enough to enhance teachers’ use of computer technology. Teachers also need increased training to help motivate them to integrate computer technology (Hope, 1997, Walters, 1992). In addition, establishing a general climate conducive to computer technology use is one important step. Such climates include having administrators, colleagues, and students who expect to see computer technology in use (Marcinkiewicz, 1996), and a principal who motivates teachers to use computer technology (Chin & Hortin, 1993). Teachers who work in schools they perceive to be supportive of computer technology use demonstrate lower anxiety and higher levels of competence than do teachers in non-supportive schools (Bradley & Russell, 1997). Schools that offer professional development opportunities, along with release time for skill building and instructional preparation, can establish a climate conducive to computer technology use (Bradley & Russell, 1997). Sheingold & Hadley (1990) reported that a combination of factors, including ample computer technology, support, and time for teachers to learn computer technology, along with an academic and cultural structure that encourages teachers to experiment with computer technology, would result in increased computer technology integration in classrooms.

Preservice teaching experiences can also influence the later adoption of computer technology in classrooms. Modeling the use of computer technology in teacher education courses is an effective approach (Willis, 1997), although this may occur infrequently (White, 1994). In addition to providing role models of effective computer technology use, teacher education coursework should integrate computer technology training with curriculum and instruction courses, rather than teaching computer technology skills in isolation of content (Oliver, 1994; Wang & Holthaus, 1997). Overbaugh & Reed (1992) reported that introducing computer technology skills in either an introductory computer course or a content-specific course resulted in preservice teachers increasing their computer competency and confidence in integrating computer technology, in addition to reducing their anxiety. Striving to find supervising teachers who use computer technology in their instruction and will therefore support student teachers in their attempts to integrate computers is also important. (Wang & Holthaus, 1997).

While the use of technology in social studies classrooms is on the rise, the catalyst for substantive change will come from new teachers with training in the use of technology. Most of the literature reviewed is from in-service teachers. However, if we think of the role that teacher preparation courses (specifically, social studies methods courses) might play in shaping future teachers’ thoughts and uses of computer technologies, then insight into the perceptions of preservice teachers is important. This study identifies preservice social studies
teachers' perceptions of obstacles and benefits of integrating technology into their future classrooms.

Method

Participants

A purposive sample of fifty-eight students in elementary and secondary social studies methods classes was selected for this study. These methods classes were comprised of preservice teachers who sought their initial teaching certificate. They attended one of two state universities that differed in certification program design and geographic region (one was located in the northwest, and the other in the southeast United States). These programs were chosen because they both involve their students in field experiences, have computer technologies readily available for student use, and require students to take instructional technology coursework. In addition, faculty in these programs are active in technology grant work and make it a point to model technology use in their education courses. In short, we decided to select these programs because they are at technology-rich universities and have a strong emphasis on preparing teachers to use computer technology. It seemed most fruitful to begin examining preservice teachers' perceptions of computer technology from programs where they have thought a good deal about it.

Data Gathering

The sample was comprised of 26 elementary education students at a southwestern university and 32 secondary education students at a northwestern university. Data were from questionnaires distributed to the students enrolled in the social studies methods courses during spring quarter of 1999. The questionnaire had two components: The first part was a series of background information in which students indicated frequency of computer use, numbers of observations of computer use in K-12 schools, and the importance of the computer in their daily life. We also had participants rank order their use of the computer as an instructional and productivity tool by using a series of forced-choice responses. Thirty-five questions were in this first section.

The second section was comprised of four open-ended questions: 1) What are the benefits of using computer technology in the classroom? 2) List the best uses for computer technology in your content area. 3) What obstacles do you think you will face when incorporating computer technology into your classrooms?; and 4) What uses of computer technology have you observed in schools, either as a teacher or student? These allowed participants a chance to explain the benefits and obstacles to using computers in the classroom, uses of the
computer specifically for social studies instruction, and observed uses of computer technologies in K-12 settings.

**Data Analysis**

The analysis of data consisted of the following stages. First, we tallied the responses and generated categories by examining collected data, attempting to identify common themes in the data. The four open-ended questions received most of the attention, as we read the responses and created initial categories. During the second stage we compared similarities and differences among the categories created in stage one. Some categories were combined with others that had similar properties. The third stage further integrated the data around fewer, more encompassing categories. This process entailed: creating new categories, refining (sharpening) categories, and elaborating (further illustrating) existing categories. These first three stages did not necessarily follow this linear progression. Typical of this method of analysis, these stages formed a repetitious process of coding, comparing, and refining (Glaser & Strauss, 1967). The constant comparison of data led to the fourth stage of data analysis: writing a “theory in-process” of teachers’ perceptions of the perceived obstacles and benefits of computer technology in the classroom.

**Findings**

In this section we examine two encompassing categories of preservice teachers’ perceptions of computer technology: the benefits and obstacles of using computers in the social studies classroom. Benefits allude to how the computer enhances teaching and student learning, while obstacles prevent or inhibit the use of the computer in the classroom. While additional findings from the survey are available, an emphasis on the benefits and obstacles constitute a meaningful unit of study, and are an initial examination into the perceptions of preservice teachers and computer technology. For each perception we provide descriptions and provide examples from the data to support our claims.

**Perceived Benefits**

Our sample perceived five benefits of using computer technologies in the classroom. In general, the classroom computer was seen as an enhancement to student learning, and beneficial to the instructional setting when it promoted more dynamic instruction, encouraged students’ hands-on use of information, promoted the use of classroom knowledge beyond the walls of the classroom, and prepared students with computer skills and logical thinking skills that would be used in future jobs. Specifically, the preservice teachers we examined had the
following perceptions about how the computer might benefit the classroom and student learning: data collection; improved student computer skills; dynamic sound and images; instructional variety; and, communication tool. In the remainder of this section we present findings related to each perception.

Data collection. Of all the perceived benefits of computer technology in the classroom, our sample of preservice teachers mentioned data collection most frequently; 88% of the participants reported this benefit. Data collection was mentioned in several ways. One aspect indicated was that of a teacher using the computer as an aid as they prepared for instruction. Some respondents indicated that accessing lesson plans, information databases, and resources for teaching about particular academic content were available as a result of computer technology. For example, one student wrote that the computer will "help me plan lessons, with record keeping, [and] production."

The broad category of "student research tool" represented a second type of data collection. Respondents indicated that information that may not have otherwise been available was obtainable through the Internet or information databases purchased by the local district. Sample comments include general statements such as "use the Internet for research" or to "access primary sources and research information." Another preservice teacher stated that the Internet provided a benefit for students to "gain access to a variety of positions/opinions on an issue, especially minority [less accessible] opinions."

While many of our sample used broad statements such as "wealth of information available on the Internet," another more focused subcategory emerged from the data. This third aspect of data collection mentioned was accessibility to contemporary events. The Internet, and its capacity for research and for information searches was seen by these preservice teachers as a tremendous way to bring new and current information into the classroom. They suggested that a computer, with Internet access, provided data collection opportunities they would not have available otherwise. For example, one response indicated that "global and instantaneous information access" through online sources such as newspapers or the CIA World fact book was a noteworthy benefit.

Improved student computer skills. Another benefit recognized by our respondents was that students learn technology-related skills that will be useful for employment. In our sample, this was the second most-frequently mentioned benefit (31% of the participants). Keyboarding skills, problem solving skills, awareness of software programs, and feeling "comfortable" with the computer functions all were perceived as benefits. Interestingly, these transcended social studies instruction, and were seen as benefits beyond the academic content related to a particular course. For example, our sample indicated these
are "skills kids need," and "it is the wave of the future and students need to understand how to use it." Computer use was perceived as a skill necessary for their student's successful transition to "work or higher education." In other words, the development of computer skills was perceived as an intellectual benefit that was learned in addition to the actual course content.

**Dynamic sound and images.** The sample we surveyed perceived the computer as a tool for enhancing the use of dynamic sound and images in the classroom. Twenty-two percent of our preservice teacher sample mentioned the audio/visual benefit. The specific types of sounds and images mentioned include video clips, sound files, photographs, maps, graphics and graphs. The benefit of adding excitement to the classroom through computer-generated media is indicated by the data. For example, responses included: "The visual dynamic and opportunity for incorporation of multimedia is exciting" and "It [computer technology] provides opportunity for color, sound, and images to be more dynamic [in the classroom]" and "making graphics to decorate my classroom."

The data also indicate that access to visuals readily available through the Internet and CD-ROM is perceived as beneficial for student learning. A respondent indicated that using "[computer-generated] visual information helps students put together a picture of history," and is an "aid to visual learners."

**Instructional variety.** The computer is perceived as a tool that allows teachers to instruct students using multiple modes of instruction. This perception, mentioned by 29% of our sample, is similar to "dynamic sound and images" in that variety is provided when visual aids, primary sources, and sound reproductions are injected into the classroom. However, those in our sample perceived the computer as a tool that goes far beyond providing additional "bells and whistles" to an instructional strategy. Instructional variety, as used here, primarily means that a computer allows for students to learn information from multiple sources, and with some degree of autonomy. In other words, the content of a lesson might be provided several ways because of a computer.

Educational software was mentioned as one approach to providing variety. A preservice teacher noted the benefit of computer-run simulations such as "software designed for the classroom such as Tom Snyder products," which allow students to examine important issues in small groups, or as a class. The simulation provides a framework for the learning of content about a particular issue. Other software, such as standardized test practices, basic skills drills, and memorization tasks provide low-level learning, but were perceived by our sample as adding variety to the way content was learned by students.
The computer was also perceived to allow for instructional variety by providing opportunities for independent student learning. This was typically perceived as individualized work on "drill/skill" programs (e.g., SAT test preparation programs), but our sample alluded to the notion that students learn from computer projects and activities where they work individually. Where computer software that requires lower-level thinking is readily available, our sample suggested that higher-level thinking is possible when the computer becomes a tool for enabling independent work.

Communication tool. The use of the Internet for e-mail, chat rooms, threaded electronic discussions, and other forms of interpersonal communication was perceived by 21% of the preservice teachers as a benefit of classroom computers. For example, the sample indicated class-based list-servs allow teachers to communicate quickly with students. Other respondents mentioned the benefits students using computer technology to communicate with peers in the form of "key pals." The sample also mentioned civic participation is electronically enhanced through "interaction with the government," and "lobbying via email."

Perceived Obstacles

The benefits of computer technology listed above were counterbalanced by another perception. The preservice teachers in our sample indicated several obstacles to effective implementation of computer technology in the classroom. These obstacles include: accessibility; differing ability levels; dependability; and, supervision of students. A description of these categories follows.

Accessibility. Sixty-six percent of the preservice teachers perceive that the lack of access to computer technology will limit its use in the classroom. While many in our sample did not differentiate between teacher and student access, it is clear there is substantial concern over this issue. They reported that school and classroom issues such as the number of computers, age of hardware and software, or Internet connectivity would be influences beyond their control. This lack of control creates uneasiness about depending too heavily on integrating computer technology into their proposed curriculum. For example, students indicate they are uncomfortable writing a unit plan incorporating the use of specific simulation software while they have concerns with accessibility issues. One respondent stated "I see lack of technology as my biggest obstacle." The data indicate a number of specific issues related to accessibility. Students have concerns not only with the number of machines available in the classroom but also with access to computer labs in the school. A number of students made a distinction between access to computers and access to up-to-date hardware that would have adequate speed or CD-ROM drives. Others indicate access to software or to the Internet as major areas of concern.
Finally, concern was expressed over the issue of equal access for students desiring to use the computer at their home. For example, the sample stated a perceived obstacle was “unequal access to computers outside the classroom.”

**Differing Ability Levels.** The wide range of student and teacher ability with computer technology is another perceived obstacle. Of our sample, 35% reported this as a concern. The data indicated this on two levels: the ability of the teacher vs. the ability of the class; and, varying ability levels within the class itself. Preservice teachers in particular are apprehensive about appearing unqualified or lacking expertise in front of a class. For many, this may inhibit a venture into an area in which the students, frankly, may know more than the preservice teacher. For example, one respondent stated their greatest concern was that “the kids know more than I do!” Often times, this is seen as a personal attack on the preservice teacher’s “control” of the class and becomes a perceived classroom management issue. Second, the data indicated the difficulty of dealing with a wide variety of ability levels within the classroom. Students with differing abilities could create logistical concerns as the teacher tried to manage many students engaged in different tasks.

**Dependability.** A fear of equipment failure was perceived as an obstacle to effective implementation of computer technology in the classroom by 21% of the preservice teachers. Two responses were indicative: “If the Internet goes down then your plan is ruined” and “It not working, this is my main concern with using technology to teach.” This fear is deeply rooted for preservice teachers as it moves them away from the “plan” and into the uncertain. While most experienced teachers can move around unexpected circumstances with a degree of fluidity, preservice teachers are learning this skill and desire highly stable conditions. Some of our sample indicated the amount of time necessary to prepare for some uses of computer technology along with this possibility for equipment failure was also a cause for concern. Given the new environment in which preservice teachers find themselves further risk-taking appears to be a considerable obstacle.

**Supervision of students.** The need for supervision of students using computer technology was mentioned by 22% of the participants. Our sample reported that the teachers’ focus would be diverted from the daily objective as they kept students safe from inappropriate Internet sites. For example, the preservice teachers were concerned that students might access “inappropriate websites, specifically those sites with explicit content, or places where predators may take advantage of minors. Along these lines there is also concern over legal ramifications for the failure to keep children safe on the Internet.

The sample also indicated that while student surfing might not be harmful, it would be difficult to “keep students on task.” Just as
thumbing through an encyclopedia can lead a person to unintended destinations, surfing the Internet with its limitless supply of colors, sounds, and graphics can be even more enticing. As a result, there is an increased need for supervision. One respondent summarized his viewpoint this way, “Technology is great if you are in control!! Use it, it is an advantage, if you are not in control it is evil!”

Discussion

Juxtaposition of Benefits and Obstacles

Using computer technology places time and emotional demands on teachers. Benefits of the computer such as providing access to information, individualizing instruction, and assisting the learning of course content are often at odds with obstacles such as gaining access to computers for all students, receiving adequate training to use the technology, and worrying about the reliability of classroom computers to operate as planned. For example, while preservice teachers may be able to list many learning benefits from using computers, concerns about setting up the computer, or the behavior of students in the computer lab may inhibit their actual use of computer technology. At issue is not whether teachers perceive the benefits, but whether they perceive the obstacles to be insurmountable. If they do, then the computer and its accompanying technology will be perceived as a less-viable for use in the classroom.

If the computer is perceived as an additional task for the teacher, with limited benefits for the student, obstacles may be more overwhelming than if the computer technology is perceived as a supplement to student learning—where learning is enhanced because of the technology.

Beyond an additive or supplemental approach is the use of the computer to change the structure of the curriculum. When students can examine ideas, concepts, information, and other components of course content uniquely and powerfully with computer technology, the computer becomes a tool for transforming the curriculum. Web-based inquiry projects or laptop-based courses (Larson, Gotchy, & Case, 1998) are two examples of how computers could transform a curriculum. Again, obstacles will still be prevalent. In fact, obstacles will abound when the computer is used in the classroom. How teachers perceive the obstacles in relation to the benefits offered by the computer will be a determining factor in a teacher’s willingness to incorporate them into the classroom.

A point of tension associated with the use of computers in the classroom is related to the collection of data and the resultant increasing need for student supervision. Our sample mentioned the use of the computer for data collection more frequently than any other ben-
efit, but most of our sample expressed a concern that the Internet will be problematic for student research in two ways: 1) students could be targets for predators, or will actively seek inappropriate material; and 2) students will become distracted by the myriad of websites and off-task behaviors will result.

We are concerned that preservice teachers, if not given the tools to help keep students on task, as well as help provide a safe environment for learning, may choose to discourage if not avoid this form of data collection entirely. At issue then is the question, how can social studies methods courses more adequately prepare preservice teachers to overcome this obstacle?

**Implications for Social Studies Methods Courses**

Preservice teachers must consider computer technology as logistically and managerially feasible if they are to use it to supplement their curriculum and instruction. Issues around classroom management and control, integrating the computer into the daily lessons, and "seeing in action" the use of computer technology are critical in the preparation of teachers.

Our sample suggested a wide range of roles when using, or helping students use, the computer. If students lack knowledge and skills needed to use a particular application, or to stay engaged without teacher direction, then instruction is needed before the computer can be used effectively in the classroom. Students' lack of skill in these areas concerned our sample of preservice teachers, and college methods course curriculum might consider including instruction about preparing students to use technology. Participants in our study mentioned a concern about monitoring students as they used the computer. Skills at monitoring, assessing students' computer capabilities, and providing remedial computer instruction were seen to be important for being prepared to integrate computer technology into the classroom.

If teachers are going to perceive that the benefits of using the computer outweigh the obstacles, they need to understand how to lead a classroom with it, assist students as they use it, and have evidence that it will work with students. Practice teaching with computer technology seems important. Our sample of preservice teachers used computer technology frequently, and has been taught in technology-rich environments. The public schools where they will work may be less equipped, and the time pressures inherent with teaching will add obstacles. If our students fully understand the benefits of using technology they might be more likely to address and overcome these and other potential obstacles.
Conclusion

Our purpose was to identify perceived benefits and obstacles that preservice teachers may have about the classroom use of computer technology. Our findings are based on data that we gathered ourselves; they do not test conclusions already formed. Computers and the Internet will increasingly impact classroom curriculum and instruction. As teachers prepare to enter the field, they will need to effectively weigh the benefits and obstacles of computer use. We hoped to begin the examination of how to prepare teachers by examining the perceptions of this initial sample. Companions to this study are needed, of course, in other subject areas and teacher education programs. Gradually these can be pulled together into reasonably sound generalizations against which teachers and supervisors can reflect upon classroom practices and teacher educators can provide instruction on integrating computer technology itself.

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Will Our Children Only Inherit the Wind?

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Because we so often forget, I find it useful to begin any discussion of technology by paying our respects to those who gave us the essentials. First, to the Israelites who invented a phonetic writing system that we call an alphabet. Aside from language itself, the alphabet is humankind's most powerful and irreplaceable technology. It was invented about 3,500 years ago, possibly by the followers of Moses, who, having nothing to do in the desert for 40 years, may have put their minds to the problem of how to record human speech efficiently. It is astonishing to think that phonetic writing was invented only once, all other such writing systems being derivations of the alphabet.

Second, we are indebted to the Greeks, who improved the alphabet and made use of it to create a variety of texts from which all modern, secular learning springs, including dramatic literature, philosophy, logic, rhetoric, science and history. In my university, about 90% of the ideas we discuss every day are only commentaries on ideas the Greeks wrote about 2,300 years ago. Third, we are indebted to the Chinese, who invented paper which was brought to the Western World in the 13th century, just in time to replace all other writing surfaces, which had become both scarce and expensive. And fourth, to the Germans, who gave us the printing press with movable type, which created the conditions for universal literacy.

So far as I can tell, there is no serious purpose of education that cannot be served by using these technologies. The written word extends and amplifies the intellect by giving order, coherence, variety and consistency to the mind. The printed word provides us with a precise and enduring historical memory. It also provides us with a sense of objectivity, detachment, and special competence in the uses of abstract thought. It is well to remember that every modern technology which educators yearn to have, from television to computers, was invented by men and women whose education was conducted almost exclusively with pen, paper and book.

I start with these reminders of the powers of writing and reading because many teachers in different parts of the world are inclined to be dazzled by electronic technology and by things that plug into wall-sockets. There are some who have even come to believe that competent teaching and deep learning can only occur with the aid of video, films, and computers. This nonsensical belief is, in fact, one of the
most serious impacts of technology on education: Educators have lost confidence in the pen, in paper and in the book. Some have even lost confidence in the word itself.

In America, where teachers now commonly believe they cannot do their work without visual and electronic aids, and where there are abundant resources to provide such aids, we have been unable to improve our teaching and learning. In fact, they have probably become worse. One out of every four high school seniors in America cannot add the cost of three items on a restaurant menu; half of them cannot find Japan on a world map, and more than a third of them cannot find France; almost 70% cannot say within a 50-year margin of error when the American Civil War occurred; and 4 out of 10 cannot say when World War I took place. Half of them do not know who Joseph Stalin was, and 60% cannot identify the most famous poem of America’s greatest poet, Walt Whitman. I might add here that 40% of our 17-year-olds believe that the Biblical Jonah was the man who was thrown into a lion’s den. And since most Americans are Christians, it is very nearly unbelievable that one-third of our 17-year-olds do not identify Judas as the betrayer of their Lord, an astonishing percentage of them believing that the betrayer was Jesus’s mother, Mary.

I do not say that this massive ignorance is caused by the use of new technologies in the classroom. What I am saying is that the new technologies both in and out of the classroom are a distraction and an irrelevance. They turn attention away from books and book-learning, and they are a force which give to the pen, paper and book, an obsolescent character. This is dangerous but it is not surprising. All new technologies tend to render older technologies obsolete. For example, I probably could travel to Europe by boat. But not directly, and I would need nearly a month in which to do it. The airplane makes ship travel inconvenient, impractical, and excessively expensive. Some would call this “progress.” And so would I. But new is not always better. It is not always progress. And in education new is almost never better. Nothing can be more mischievous to education than for teachers to believe that all new things are progressive, that all old things are obsolete, and that we cannot do our jobs properly unless we have new things available to us.

It is also unwise to ignore the persistent, inescapable fact that every technology, no matter how useful to a culture, and I include writing and printing, will always have important negative consequences. The printing press, for example, gave us prose, but robbed us of our delight in poetry. It gave us inductive science, but in doing so displaced the earth from the center of a coherent, meaningful universe and made it into a lonely, insignificant wanderer among the stars, forcing many of us to question if God has any interest in us at all. Writing itself gave us an historical consciousness, but at the same time destroyed the sense of magic and intimacy of the oral tradition. The
best way I know of expressing this idea is found in the play, *Inherit the Wind*. The words are spoken by Clarence Darrow who is trying to persuade a hostile jury to accept the theories of Charles Darwin. Here is what he says:

Gentlemen, progress has never been a bargain. You’ve got to pay for it. Sometimes I think there’s a man behind a counter who says, “All right, you can have a telephone; but you’ll have to give up privacy and the charm of distance. Madam, you may vote; but at a price; you lose the right to retreat behind a powder puff or a petticoat. Mister, you may conquer the air; but the birds will lose their wonder, and the clouds will smell of gasoline...

In using an airplane to go to Europe quickly and conveniently, I try to remember that my plane infuses the clouds with the smell of gasoline. Perhaps that is a small price to pay. Although I also remember that, in making the sky a highway, we cannot prevent missiles from using it. We are involved here in a trade-off. Technology giveth and technology taketh away.

Let me take as another example, medical technology, which so many praise enthusiastically, while neglecting to note its costs. In America 78,000 people every year get cancer from medical and dental X-rays. In a single generation radiation from X-rays will induce 2,340,000 cancers. Am I arguing against the use of X-rays? No. I am making the point that technology giveth and technology taketh away, always.

A United States Senate investigation into surgical practice, as far back as 1974, estimated that American doctors had performed 2.4 million unnecessary operations, causing 12,000 deaths and costing about 3.9 billion dollars. Am I arguing against surgery? No. I am pointing out that with every advance in technology there is an inevitable and harmful side-effect. The term “side-effect,” by the way, is used by physicians, not patients, to whom the side-effect is often the main-effect. Especially if they die from it. Indeed, American doctors share a private joke about an amazing new drug that cures nothing but has interesting side-effects.

What about technologies that are used in education? Will computers, for example, have some unpleasant side-effects? The next time you meet sales-people of computer technologies, you might ask them this question. My guess is that they will have no answer. They may even be surprised at the question. They are prepared to tell us about the wonders of their computers but not about the price we may have to pay. And speaking literally of price, one obvious side-effect of using personal computers in schools is that they will cost a lot of money. In America it has already cost billions. This means that we cannot pay
teachers adequately, we cannot afford to have more teachers, and cannot attract to the profession our best young people. A pretty serious side-effect, I would say. So serious that we may end up with decayed buildings, understaffed faculties and unhappy or incompetent teachers but with plenty of shiny, new computers. This may be a case of a new technology that cures nothing but has interesting side-effects.

Another possible side-effect is that our children may come to believe that the most important problems in life are solvable through the use of computers. After all, there is something magical about computers, and there is no question that they generate, store and retrieve unprecedented volumes of information at incredible speeds. As a consequence, people who ardently speak of the computer revolution often sound as if they believe that our most serious personal and public problems require technical solutions through fast access to information otherwise unavailable. But, as grown-ups, surely we know that our most serious problems are not technical, nor do they arise from inadequate information acquired slowly. If a nuclear catastrophe occurs it shall not be because of inadequate information; where people are dying of starvation, it does not occur because of inadequate information; if families break up, children are mistreated, crime terrorizes a city, none of it happens because of inadequate information. Precise calculation, instantaneous communication and vast quantities of information have, in fact, nothing whatever to do with these problems. The computer is useless in addressing them. These are problems that concern the human heart and spirit; human aspirations and imperfections; our hubris and fear of death. They are about the search for meaning, not information.

Joseph Weizenbaum, one of MIT’s famous professors of computer science, has tried repeatedly to help us to see this plain fact. He has said more than once that the computer revolution is an explosion of nonsense, that computers are merely ingenious devices for unimportant functions. I am not willing to go quite as far as Professor Weizenbaum, although I am sometimes inclined to believe that, if the printing press was, as David Riesman called it, the gun powder of the mind, the computer may well be the talcum powder of the mind. In any case, the delusion that the computer is an instrument for the solution of profound human dilemmas creates serious side-effects. Already, we see a form of it among those people who actually believe that we cannot do important and complex things without the computer. Norbert Wiener, the MIT professor who founded the field known as Cybernetics, once remarked that if digital computers had been in common use before the atom bomb, people would have said that the bomb could not have been invented without computers. But it was. It is possible to do most everything we need to do without the computer. But it is also possible that we will forget how to do them.
You might think at this point that I am speaking against computers in the classroom. But I am not. There are some who claim, Seymour Papert, for one, that computers will help students learn mathematics more deeply and pleasantly than they usually do. Perhaps they are right, although there is no strong evidence of it at the moment. There is some evidence that students who are fearful of writing will increase their fluency by using a word-processor instead of pen and paper. And, to shift to other machines, there are some who say that the use of television and films in the classroom can help young students learn the alphabet more quickly and inspire older students to read literature. There is nothing to object to in any of this. A rich nation, with ample resources, might wish to make use of these teaching aids. Assuming we remain strong in our respect for the power of the written word, and assuming we are prepared to cope with unpleasant side-effects of new technologies, I do not think there would be any great harm done, and possibly some good. But we must not be deluded into thinking that any technology including pen, paper and book is at the heart of education. Yes, our young need to read and write and calculate and think. But for what purpose? Even if we believe that new technologies can make learning more efficient and interesting, we must still face the question, What is learning for? Efficiency and interest are only means to an end. What is the end? Every great educator—Confucius, Plato, Hillel, Cicero, Erasmus, Locke, Rousseau, Jefferson, Montessori, Dewey—believed that there was some transcendent political, spiritual or social idea that must be advanced through education. They did not see education as a technical problem. The question of what technologies to use, and when, was considered, but only at a late and convenient hour. Each of these educators had a vision. For Confucius, the purpose of education was to maintain tradition and ensure social order. For Plato, education was to produce philosopher kings. For Hillel, it was to enrich one’s devotion to God, and to understand the true meaning of piety. For Jefferson, it was to teach the young how to protect their liberties. And for John Dewey it was to promote a democratic ideal through the cultivation of reason and scientific detachment.

And if we ask where these visions came from, the answer is that they came from some great narrative which permeated the culture in which these people lived. By narrative, I mean a story of a people’s history which gives meaning to the past, explains the present, and provides guidance for the future. I need hardly say that the source of the world’s greatest narratives has been religion, as found, for example, in the Old and the New Testaments or the Bhagavad Gita or the Koran. But there are other sources: mythology, politics, philosophy and science, for example. No culture can flourish without narratives of transcendent origin and power. In America, we once had such a nar-
rative. Our people believed that America was a part of God’s plan, a great experiment in individual freedom and cultural diversity, and that we had a providential duty to spread our ideals throughout the world. It is a wonderful story. It infused our nation with energy, creativity and charity. It made our nation great and our education system the envy of the world. But, it pains me to say, I do not think most Americans believe much in this story any more, and that explains, to a great extent, the collapse of our education system. If a culture does not have a narrative, then education has no important purpose. And, of course, it then makes no difference what technologies we use.

I do not mean to say, by the way, that the mere existence of such a narrative ensures the stability and vitality of a culture, and makes education worthwhile. There are dark, evil and terrible narratives. A narrative provides meaning, not necessarily survival, as, for example, the story provided by Adolph Hitler to the German nation in the 1930s. Drawing on sources that derive from Teutonic mythology and resurrecting ancient and primitive symbolism, Hitler wove a tale of Aryan supremacy which lifted German spirits, gave point to their labors, eased their distress, and provided explicit ideals. The story glorified the past, elucidated the present, and foretold the future, which was to last a thousand years. The Third Reich lasted exactly eleven years.

I do not wish to dwell on the reasons why the story of Aryan supremacy could not endure. The point is that cultures must have narratives and will find them where they will, even if they led down a pathway to catastrophe. The alternative is to live without meaning, the ultimate negation of life itself. And so, the question must now be asked of educators, What story do you wish education to tell? What is the transcendent narrative which will give meaning to children’s learning, will frame and organize their understandings and thereby generate enthusiasm and purpose? Is it a story that depicts one’s nation as a moral light unto the world? Is it a story of the struggle of 18th and 19th century democratic ideals to survive? Is it a story of a fearsome military power in a hostile world?

Have we no story that will provide our young with courage and a sense of coherence? If that is the case, we may take some comfort in the fact that in many places in the world, people are facing a similar crisis in narrative. In Eastern Europe, for example, and especially in Russia, we find people who almost overnight have been stripped of the great story that Marx and Lenin had revealed to them and which had given them so much energy and purpose. Their story did not require God to be on their side, as did the American story. Their story put history on their side, and they were to play their parts as agents in assisting history toward the triumph of the proletariat. It appears now that this is a dead narrative. Where will they find another? And what is to become of their children until they do?
In America, as I implied a moment ago, we also face a crisis in narrative especially now that the “evil Empire” has fallen to its knees. If we are no longer the great Defender of Western ideals, then what are we? Are we no longer a part of God’s plan? Are we still a model of democratic ideals? Or merely a great imperial power, with no more moral authority than Imperial Rome?

If you are wondering how these questions affect American education, you should know, first of all, that a very high percentage of our students drop out of school before completing their studies. If you want to know why, you must watch any TV commercial urging the young to stay in school. The commercial will either imply or state explicitly that education will help the student to get a good job. And that’s it. Well, not quite. There is also the idea that we educate ourselves to compete with other nations in an economic struggle to be number one. Neither of these purposes is, to say the least, grand or inspiring. The story suggested is that America is not a culture but merely an economy, which is the last refuge of an exhausted philosophy of education, education as an instrument of economic policy, and nothing else.

Of course, there is another story, the tale that tells us that in technology we will find a great narrative to fire the heart and enliven the intellect. I believe this to be a false hope. Technology can never be the end of learning. It is, has always been, and must always be the servant of human aspiration. To regard it as our master is as degrading as it is tempting. We will know how to employ technology in schools when we agree on the purpose of education, and not before. And we will agree on the purpose of education when we have reclaimed some great national dream which commands respect and devotion, and takes hold of our children’s consciousness.

Earlier, I quoted from *Inherit the Wind*. The title comes from a fragment of advice given by King Solomon in his proverbs. The entire sentence is as follows: “He that troubleth his own house shall inherit the wind.” This piece of wisdom has been expressed in different forms many times since, most notably by America’s greatest president, Abraham Lincoln, who said, “A house divided against itself cannot stand.” Although I lack the eloquence of a Solomon or a Lincoln, I will take the liberty of making my own version: A house that has no unified dream cannot know what learning is for; its schools cannot be improved by adding a TV set or a computer, and its children will only inherit the wind.

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Considerations for the Diffusion of Technological Innovations in Social Studies Teaching and Learning


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Getting a new idea adopted, even when it has obvious advantages, is often very difficult. Many innovations require a lengthy period, often of many years, from the time they become available to the time they are widely adopted. (Rogers, 1995, p. 1)

Diffusion of educational technologies has been gaining momentum in schools since the early 1980s. Berson (1996) reports that social studies educators are somewhat less likely to integrate technology into the curriculum than instructors in other disciplines. Martorella (1997) characterized the field of social studies as a "sleeping giant" because of the gap between current and potential uses of educational technologies in the field.

As social studies educators consider how to best prepare social studies teachers to appropriately integrate technology in their teaching, it may be useful to examine ways in which diffusion of technological innovations occurs in other fields. *Diffusion of Innovations* (Rogers, 1995), now in its fourth edition, has become the standard reference in this area. It provides a theoretical framework for models of diffusion and offers a critical examination of the research evidence, including a synthesis of more than 5,000 research articles in this area. Diffusion of innovation and change in fields that include business, agriculture, medicine, government and education are examined. Similarities and differences in the adoption practices across these fields provide a useful perspective.

Case studies in *Diffusion of Innovation* illustrate different facets of diffusion theory and highlight complex issues associated with diffusion efforts. Rogers (1995) defines diffusion as,
a kind of *social change*, defined as the process by which alteration occurs in the structure and function of a social system. When new ideas are invented, diffused, and are adopted or rejected, leading to certain consequences, social changes occurs. (p. 6)

In some ways social studies educators are better prepared with respect to background and education to understand these social forces than those in other disciplines. Rogers notes that diffusion of innovation studies draw upon research methodologies from anthropology, sociology, psychology, communications, and economics – fields that are also closely related to social studies.

**Rationale for Integration of Technology**

The first and most important question is the extent of the responsibility of social studies teachers to integrate appropriate uses of technology in their teaching. We regularly encounter social studies teachers, and teacher educators who prepare them, who are not yet persuaded that technology has a central role in social studies teaching.

Yet the world is undergoing a knowledge-driven economic revolution. Noted MIT economist Lester Thurow (1999) claims that when future capitalists talk about wealth they will be talking about control of knowledge rather than about ownership of goods or natural resources.

Teaching, learning, and schools will be affected by this revolution. New technologies will make it possible to learn in different ways. Universities as we know them will change dramatically. The content of core subject areas in K-12 schools may be subject to revisions. Instructional methods and content shaped by an agrarian economy in the 19th century may not be as appropriate in the 21st century.

Thurow (1999) reports that in today’s economy individuals with average skills are actually receiving less real income than 20 years ago, while individuals with above average technical skills are earning considerably more. The knowledge revolution is producing new wealth, but the wealth is not shared equally. Thurow (1999) notes that very skilled workers are worth more while those in our society with average skills are worth less.

**The Digital Divide**

This well-documented sea of change in the basis of economic success has raised concerns about a *Digital Divide* between rich and poor. Studies (CEO Forum, 1999; U.S. Department of Commerce, 1999; Wenglinsky, 1998) suggest that students in lower-income areas are more likely to use the computer for drill-and-practice activities, while
teachers in middle class schools are more likely to use technology to facilitate constructivist approaches to learning. More than half the families in America now own a computer, producing an uneven playing field in schools. The student without access to a computer and Internet connection is undeniably at a disadvantage when competing with a child who has greater access to technology.

Schools have not yet begun to resolve the real dilemma presented by this conundrum. In the past some teachers have responded by banning use of technology in their classroom—refusing to accept papers that are not handwritten to level the playing field, for example—but this is not a constructive solution for the long term. Reducing students to the lowest common denominator condemns them to compete at this level after graduation. Schools have a responsibility to ensure that all students are prepared to participate in a digital future.

**Strategies for Social Studies Education**

College history teaching is being transformed by the availability of online primary sources. Diffusion of innovation research provides a context for ways in which successful uses of innovation at the college level might be appropriately adapted for use in K-12 schools. Rogers employs the term "re-invention" to describe this process of adaptation.

In the past one of the factors that distinguished the professional historian from others was access to primary sources. Now the nation's scholars are making many of these resources available to anyone with Internet access. The Center for Digital History at the University of Virginia, like many other scholarly web sites, has made thousands of digitized letters and newspaper articles from the Civil War available on its *Valley of the Shadow* web site. [http://jefferson.village.virginia.edu/vshadow2/]

This presents its own set of instructional issues and considerations, even at the college level. For instance, history teachers previously faced the problem of underrepresentation—textbooks simply were not large enough to contain all the stories of different groups in sufficient detail and diversity. Now they face the problem of overrepresentation—how can students be taught to use new resources and methods, and avoid being overwhelmed by the sheer magnitude of material available? In order to use such resources, students must be taught to use new tools of scholarship, such as database search engines. They also must be taught how to critically evaluate this information and how to synthesize it with information obtained from other sources to construct meaningful understanding.

History professors who are faculty in the Center for Digital History have taken advantage of the promise of new technologies by involving the students themselves in actual historical research. Students
participating in these courses contribute to the actual historical database, working under careful supervision. Rather than turning in a term paper that will languish in a file cabinet at the end of the semester, their work will serve as a foundation for others to build upon. More importantly, students who become the historical researcher's colleagues are better prepared to appreciate and evaluate historical research conducted by others.

Adaptation to K-12 Teaching

High school social studies teachers face challenges that go beyond those faced by college history faculty. College faculty have more autonomy, and their students have greater and more uniform access to the Internet. One component of the Impact Project, an initiative that involves members of the National Council of Social Studies (NCSS) College and University Faculty Assembly (CUFA), links innovative college history faculty in colleges of arts and sciences with social studies educators in teacher education programs. By working together with one another and with practicing social studies teachers, this research team can identify methods of adapting innovative college teaching methods to K-12 schools. By building a bridge between teacher education and arts and sciences, each group can contribute its relevant expertise to the task.

Rogers notes that triability is one of the most important factors in diffusion of innovation. By working with pilot groups, it becomes possible to try innovations on a small scale and demonstrate efficacy before recommending adoption on a larger scale. At the same time, new collaborative technologies make it easier for a geographically-dispersed group to work together. However, even under the best of circumstances, these important steps and others like them will require a lengthy gestation period.

Appropriate Uses of Technology

Teachers have a responsibility to integrate appropriate uses of technology in teaching and learning, and the promise of these technologies is particularly great in social studies. Technology enables social studies teachers and students to access real-time data, manipulate and present statistics in various format, critique primary sources, develop global learning communities, participate in social and historic simulations, analyze situations from multiple perspectives and pursue individual interests more readily. However, uncritical acceptance of inappropriate uses of technology in teaching can be just as detrimental as failure to employ appropriate uses. Rogers points out that a pro-innovation bias in diffusion research can result in a failure to employ appropriate uses of technology, citing research resulting in adoption of the mechanized tomato harvester.
The mechanized tomato harvester was developed through agricultural research underwritten by tax dollars and introduced in 1962. The result was a harder tomato with fewer vitamins than the previously-grown tomatoes preferred by most Americans. Six years after introduction of the innovation, only one-fourth of the farmers who grew tomatoes in California were still in business because small farmers were unable to afford the mechanical harvesters. By 1970 only 1,200 machines harvested 99% of the crop, and 30,000 agricultural jobs were lost.

Rogers asks, "In retrospect, one wonders how differently the diffusion and adoption of this innovation might have been had the R&D workers designed a smaller machine, one that more of the tomato farmers could have adopted?" (p.154) The effects of the innovation were not anticipated by the innovators, who were in retrospect described as "social sleepwalkers." (Friedland & Barton, 1975)

Adoption of appropriate uses of technology can be as important in education as in agriculture. In one instance, a mathematics education professor altered the focus of his methods course to a semester-long exploration of hypermedia stacks. By doing so he failed to provide adequate coverage of math teaching methods. The faculty member checked the highest levels of participation in surveys of technology use. However, the future mathematics teachers enrolled in the course were frustrated because they did not feel well prepared to teach high school mathematics, and developed an active dislike of technology as well.

In this instance, the difficulty was an uncritical acceptance of inappropriate uses of educational technology. Other types of software, such as Geometer's Sketchpad and Geometric Supposer would have been more relevant to the course than generic software. Garofalo (1998) has developed guidelines for appropriate uses of technology in preparation of mathematics teachers. Similar guidelines are needed with respect to appropriate uses of technology for preparation of social studies teachers.

A Systemic Approach

Even when a technology is appropriate, systemic factors may result in a slow rate of adoption. In those instances, it is important to take a systemic approach to analysis of the diffusion factors in play. Rogers has identified an "individual blame" bias in much diffusion research. He explains that,

an individual blame bias implies that "If the shoe doesn’t fit, there’s something wrong with your foot." An opposite point of view ... might imply that the shoe manufac-
For example, probes and sensors attached to handheld devices such as graphing calculators have the potential to enhance science teaching and represent a potentially valuable use of technology in that discipline. In 1997 the state of Virginia purchased a graphing calculator for every high school student. Yet few science teachers in Virginia routinely employ them.

A systemic approach would examine the school system as a whole. From this perspective, there are a number of systemic reasons why science teachers have not realized the instructional potential of science probes and sensors. Graphing calculators have a steep learning curve, with a difficult interface primarily designed by engineers rather than educators. There is no standardization across different brands, or even across different models within a given brand. The process of downloading software is a complicated, multi-step process. The user manuals are dense and filled with impenetrable jargon that focuses on technical features rather than educational uses. The probes and sensors are often expensive and unreliable. There is no correspondence between the science that can be taught with these innovations and the standards of learning upon which students are evaluated.

An "individual blame" approach to innovation might focus on science teachers, requiring them to integrate these devices in teaching despite well-founded reservations. A systemic approach to diffusion of innovation would focus on ways of changing the devices to make them more usable, and couple the lessons that can be taught with them to required science content. Systemic analyses are needed to identify ways in which technology may most appropriately be integrated into the field of social studies as well.

Characteristics of Organizations

Rogers points out that innovations do not exist in a vacuum, but within the context of social structures. The school organization itself is one of the most significant factors affecting diffusion of educational technologies. Rogers (1995) notes that

Teachers, unlike farmers, work in organizations, and so organizational structures are inevitably involved in educational adoption decisions. ... U.S. farmers mainly make optional innovation-decisions, but most teachers and school administrators are involved in collective and/or authority innovation-decisions. (p. 63)
Therefore it is important to involve school administrators and educational leaders as well as teachers in the innovation process. Most technology workshops currently are designed for either teachers or administrators — rarely are both included in the same workshop. The prominent researcher and sociologist Henry J. Becker (1999) reports approaches that include both teachers and administrators in the same workshop are more successful, as Rogers might predict.

Another implication for teacher educators is that it is not sufficient to prepare teachers to employ appropriate innovations in their respective content areas. Teachers must also be prepared to understand the implications of these methods within the larger context of the school system. Generally teacher education programs and in-service workshops focus on the innovation or technology alone, without consideration of systemic issues. At one high school, for example, social studies teachers are prepared to integrate use of the World Wide Web in classes, but the computer laboratory has been reserved for use by business and mathematics teachers. Likewise, teacher preparation tends to neglect differences among individuals. Rogers (1995) identifies “adopter categories consisting of individuals with similar degrees of innovativeness” (p. 252), thus providing insight for variation among individuals in a social system.

Social studies teachers must grapple with innovation within the context of the school system. Rogers observes that “the usual bureaucratic structure of an organization is not very conducive to creating technological innovation.” (p. 139) Teachers may wish to employ innovative methods, but standardized tests that require rote memorization will take precedence, especially if parents taught by similar methods are uncomfortable with different approaches.

A Long-Term Perspective

Legislatures generally want solutions that can be implemented immediately. One state legislature, for example, requested a technology plan to prepare all of the state’s teachers in a summer, with a report on outcomes and efficacy in the fall. Within this context, a three-year plan is regarded as a “long-term” perspective, and the focus is generally on the next quarter’s profits.

Yet Rogers reminds us that even innovations with obvious advantages may require years for widespread adoption. This is certainly the case in education. For example, Becker’s classic study (1994) of exemplary technology-using teachers found that even teachers who are effective in integration of technology in their teaching may require three to five years before they become proficient in its use. With this as a benchmark for the best teachers, longer periods of time may be required for widespread systemic integration.
Rogers’ text is valuable because it highlights latency periods for adoption of innovation that are as long or longer in other fields. Thoughtful strategies will be required for effective integration in social studies education, even in the long term. But a frame of mind that recognizes that there is not a single magic bullet, and that the adoption process involves a social process that will take place over a long period of time, will increase the chances of adopting a successful diffusion strategy.

Summary

In the future an educated citizenry will require proficiency in use of educational technologies. These technologies offer the promise of enhancing social studies teaching and learning in significant ways. The discipline of social studies has lagged behind other core subject areas in adoption of innovative teaching methods afforded by new information technologies. Diffusion of innovation studies offer important perspectives on how to best develop a successful diffusion strategy.

Everett Rogers (1995) notes, “The diffusion of innovations is essentially a social process in which subjectively perceived information about a new idea is communicated. The meaning of an innovation is gradually worked out through a process of social reconstruction.” (xvii) Those who attempt to facilitate appropriate uses of technology in social studies must study not only the educational innovation, but also the social context and mechanisms through which the innovation may be adopted.

The chances of successful implementation of these innovations increase when the context within which adoption occurs is understood. Diffusion of Innovation provides a perspective for understanding this context, and is required reading for anyone who seeks to facilitate technological innovation in an educational system.

References


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Theory and Research in Social Education is designed to stimulate and communicate systematic research and thinking in social education. Its purpose is to foster the creation and exchange of ideas and research findings that will expand knowledge and understanding of the purposes, conditions, and effects of schooling and education about society and social relations. Manuscripts reporting conceptual or empirical studies of social education are welcomed.

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The right to reply policy encourages comments on recently published articles in Theory and Research in Social Education. They are, of course, subject to the same editorial review and decision. If the comment is accepted for publication, the editor shall inform the author of the original article. If the author submits a reply to the comments, the reply is also subject to editorial review and decision. The editor may allot a specific amount of journal space for the comment (ordinarily about 1,500 words) and for the reply (ordinarily about 750 words). The reply may appear in the same issue as the comment or in a later issue.

Book Reviews
Book reviews are normally solicited, however, unsolicited reviews will be accepted for consideration. Book reviews (five copies) should be sent to: Perry Marker, School of Education, Sonoma State University, 1801 E. Cotati Ave., Rohnert Park, CA, 94928.

The length may vary from 500 to 3,500 words. The format for the top of the first page is as follows:

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