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Guidelines for Using Technology to Prepare Social Studies Teachers

David Hicks
Virginia Tech

John Lee
North Carolina State University

Michael Berson
University of South Florida

Cheryl Bolick
University of North Carolina at Chapel Hill

Richard Diem
The University of Texas at San Antonio

Abstract

The inaugural issue of *Contemporary Issues in Technology and Teacher Education* provided a series of guidelines for using digital technology to prepare teachers in the fields of social studies, math, English and science. In this paper, the authors reflect upon, revisit, and rethink the original guidelines for using digital technologies to prepare social studies teachers in an effort to facilitate theoretical and practical discussions that may, once again, serve as a foundation from which to approach the preparation and development of social studies teachers over the next few years.

In 2000, the inaugural issue of this journal, *Contemporary Issues in Technology and Teacher Education (CITE Journal),* provided a series of guidelines for using digital technology to prepare teachers in the fields of social studies, math, English, and science.[a] When read today, the guidelines are clearly products from a different era, when government policies, subsequent funding initiatives, and calls from technology advocates stressed the potential of the Internet and associated digital technologies to transform teaching and learning.

As we approached the new millennium, we saw massive investments in the technological infrastructure of the nation's elementary and secondary schools. However, it soon became clear that access to the Internet in schools was not, in and of itself, the catalyst for educational reform. Policy makers and technology advocates subsequently identified a new challenge. Teachers now needed to be prepared to use digital technologies within their teaching. One response to this challenge came in the form of the Preparing Tomorrow's Teachers to Use Technology (PT3) grant program through the U.S. Department of Education that funded the development of consortia made up of institutions of higher education, state and local education agencies, and other institutions to "contribute to the technology-related reform of teacher preparation programs."

During this period, there were resounding calls for social studies educators to rouse the metaphorical "sleeping giant" (Martorella, 1997) and learn how to use digital technologies appropriately and effectively (Becker, 1999; Diem, 1999; Fontana, 1997). Others raised the specter of social studies entering the 21st century trapped as a static and traditionalistic discipline with an outdated and irrelevant curriculum (Berson, Cruz, Duplass, & Johnston, 2007; Berson, Lee, & Stuckart, 2001).

Once published, the social studies guidelines (Mason et al., 2000) immediately generated responses from the field. Within the *CITE Journal* two commentaries were published that stressed the necessity of not simply adopting our principles uncritically or in isolation from the context of research-based theories of learning (see Crocco, 2001; Doolittle, 2001). Over the years, the guidelines appear to have garnered a level of attention and traction within the literature. As of August 2014, they had been referenced in over 170 published sources (according to Google Scholar).

However, the guidelines were published almost 15 years ago, and during this time we have grown older and maybe more critically aware of the hype cycles and the techno-romance of emerging technologies. We have seen and experienced unprecedented developments in, and access to, digital technologies that now more than ever permeate (and blur) our private and public lives, digital technologies that instantaneously connect us to networks of information (that we can consume and create) and people at multiple scales across multiple institutions. Additionally cyber security, cyber ethics, and cyber safety have emerged as societal issues that impact both institutions and individuals (Berson & Berson, 2014).

Within our field we have also seen the emergence of national and state standards (including most recently the C3 Framework sponsored by the National Council for the Social Studies, 2013) and the rise of accountability discourse and high stakes testing. We have read the growing body of literature that examines the impact of such trends on the uses (potentials and provisos) of digital technologies to support learning and teaching (Manfra, 2014; Swan & Hofer, 2008). We continue to research how and to what extent digital technologies are being used to support teaching and learning, while also continuing to prepare preservice and in-service teachers to use digital and nondigital technologies appropriately and effectively to support teaching and learning.

The world in which we live and work is not static, contextually neutral, nor ahistorical, and neither should these guidelines remain a remnant of the past. In this paper, we reflect upon, revisit, and rethink the original guidelines for using digital technologies to prepare social studies teachers in an effort to facilitate theoretical and practical discussions that may, once again, serve as a foundation from which to approach the preparation and development of social studies teachers over the next few years.

We recognize that the 2000 guidelines paper is, in many ways, a historical document that reflects the times in which it was produced. As authors of the guidelines we also recognize our hubris in thinking we could make meaning from the jumble of technological innovation that marked the end of millennium.

We recognize the abundance of, perhaps, misplaced confidence that the use of technology would reform the social studies. As Bolick (2008) reminded us years later, technology integration can be as much a Trojan horse as a transformational force.

In this revisiting of the 2000 guidelines we seek to accomplish two goals. First, we want to offer a rebalancing that takes into account the theorizing and empirical research that has occurred over the last 15 years. Second, we aim to situate the guidelines in a relevant and current context. Our original work was based on five principles to guide the infusion of technology in social studies teacher preparation programs. We want to hold fast to those principles, but at the same time draw out the assumptions within. We offer analysis that stretches the concepts and ideas suggested within the 2000 principles, thus arguing that any generalized claim about how teacher educators ought to think about using technology is necessarily and inexorably tethered to the here and now.

Herein we offer a memo to the field regarding how we might rethink what it means to use technology in social studies. We will aim high, theorizing along the way, but remaining careful to fix our gaze on the present and hold onto the end game of social studies, that of civic-mindedness.

While the impressions presented in this article of the changing landscape of technology and its impact on social studies teaching and learning have been informed by recent theory and research, we also sought to represent, in snapshot form, a slice of the thinking of social studies teacher educators. Toward that end, we asked social studies teacher educators who were members of the College and University Faculty Assembly (CUFA) of the National Council for the Social Studies about their impressions. We asked the following questions:

- How are you using technology differently today than you were 15 years ago?
- What types of technologies are you using today that you did not use 15 years ago?

The 25 responses that we received reflect the dizzying acceleration of change in terms of the nature and types of digital technologies, interconnectivity, access to data and information systems, and how they are typically used at work and in play. What is reflected in these responses is how digital technologies, and primarily the Internet in its 25th year, have permeated our lives at work. The terrain has changed. We also found it interesting how our peers talked about how their students needed to help them or prepare them to use technology. Within this snapshot is, we think, a rationale for revisiting the guidelines and for revisiting those guidelines in terms of what we know about how people learn. Here is a brief sampling of the responses.

- "This is an absurd question to ask. So much has changed in 15 years."
- "The biggest difference for my teachers is the instant availability of scholarship."
- "The range of web-based applications in use is vastly expanded (no longer just email and text searches, but now including a much richer array of graphical and video products)."
- "I've been struck by the more rapid proliferation of technologies over the past 15 years. You no sooner 'master' one application but a successor starts replacing it."
- "There needs to be more media education embracing skepticism about technology, too—not just focusing on what it empowers but also potentially disruptive and disadvantaging aspects of technological proliferation and automation."
- "Technology is now a tool for collaboration as much as tool for communicating and finding information."

Revisiting the Guidelines

In 2000, we offered the following five principles as "guides for the appropriate infusion of technology in social studies teacher preparation programs" (para. 2) We have now reduced these five principles to four with updated language and focus. We removed one guideline in recognition that this principle was a product of its time and can now be layered within and through the newly revised principles (Table 1).

Table 1
Comparison of the Original and Updated Principles

2000 Principles	2014 Principles
Extend learning beyond what could be done without technology.	Use technologies to promote effective student learning.
Introduce technology in context.	Introduce technology in context(s).
Include opportunities for students to study relationships among science, technology, and society.	removed
Foster the development of the skills, knowledge, and participation as good citizens in a democratic society.	Cultivate and support a variety of civic practices with technology.
Contribute to the research and evaluation of social studies and technology.	Contribute to the research and evaluation of social studies and technology.

In the sections that follow, we revisit the guidelines and unpack our revisions in light of current scholarship and current contexts.

Use Technologies to Promote Effective Student Learning (2014)

Our first principle focused on extending learning beyond what could be done without technology and suggested that emerging technologies should prompt new opportunities in teaching and learning.

Technology opens the door to learning social studies skills and content in ways impossible in the traditional classroom. The social studies teacher in today's classroom

can use technology to extend learning opportunities for K-12 students. Teacher education faculty members can most effectively take full advantage of technology by introducing students to activities in which skills and content are taught more actively and meaningfully. We caution, however, against using technology for technology's sake, and encourage faculty members and preservice teachers to consider whether the technology is allowing them to learn in a way they could not without the technology, or if they are at least learning in a more meaningful way. (Para 1 under "Extend Learning Beyond…")

In revisiting this principle, we recognized that as technologies have matured—particularly those we featured in the original guidelines article—and other technologies have emerged, these technologies, in and of themselves, are not necessarily prompting new or transformative learning opportunities. Thus, we have modified this first principle to focus more directly on the importance of preparing teachers to use technologies in meaningful and appropriate ways to promote effective student learning.

In our original work, we focused on access to academic source materials for active and meaningful teaching and learning, while cautioning against using technology for technology's sake. The assumption undergirding the original principle was a belief that increased Internet access to online sources through digital libraries would promote learning through inquiry in social studies classrooms. Our call for using digital technologies to teach content more "actively and meaningfully" suggested that the value of the Internet and specifically digital libraries was in the access to historical sources that previously were inaccessible without a visit to the actual archives.

We identified Virginia Center for Digital History (VCDH) as a model of a digital archive that also offered instructional materials for social studies classrooms. While historians were digitizing specific collections, educators were designing instructional units that detailed how to engage in the doing of history using the collections. In essence, we viewed VCDH as an exemplar that teacher educators could use within their methods classes to illuminate how digital libraries could support historical inquiry in the classroom.

Today, such resources are approaching ubiquity. We have digital libraries that are over 20 years old and continue to grow. Importantly, these digital libraries have educational materials and tutorials for teachers to use within their own classrooms. While we continue to encourage teacher educators and students to use these digital collections, it is also critical for teachers to be aware that such resources are part of a larger digital ecosystem. Preparing teachers (and their students) to be careful, critical, and prudent consumers of information within and across disciplines is more important than ever.

Having access to digital resources does not mean that teachers and students know how to use them to support their inquiries. Access alone does not directly equate to students learning anything. It is still important that teachers and their students learn how to develop and participate in discipline-specific inquiries, which means learning to manage research, organize data, and prioritize and unpack evidence in the construction of accounts and narratives.

Teachers and their students also need to learn how to judge the quality and utility of information garnered from online databases and digital libraries as well as archives and libraries (not everything is online). Knowing and learning to know requires preparing teachers and their students to judge the quality and utility of sources, to learn to reflect on what to hold onto and what to let go of in light of the questions being investigated. Technology alone does not make such learning possible. It is the well-prepared and versed teacher who creates the conditions to facilitate such learning.

With the rise of the C3 Framework and ongoing standards revisions that advocate the move to more student inquiry in the classroom, the concept of teacher as instructional designer is key, and teachers educators need to prepare beginning teachers to facilitate student inquiry and analysis as they learn to develop and implement disciplinary specific models of inquiry and assessment in the classroom. For example, within the discipline of history The Stanford History Group and the Roy Rosenzweig Center for History and New Media have emerged as powerful online networks for teacher educators and teachers to support the teaching and learning of history.

These educational websites provide a second level of access, one beyond the first-level direct access to disciplinary sources provided through websites such as the Library of Congress' American Memory. Second-level websites give teachers access to current and evolving models for historical thinking and instructional materials that can be used to prepare teachers to teach historical thinking in their future classroom. These second-level sites enhance teacher learning by improving the dissemination process of ideas and models about how to use and assess first-level source materials to support disciplinary inquiry. The existence of such sites creates a new type of professional learning environment within a disciplinary knowledge space that without technology would simply not exist.

The spirit of this first guideline—to do what could not otherwise be done—is time bound. When we published the original guidelines in 2000, access to information was a major innovation. It enabled things that were not previously possible in an analog world. What was once innovative is now commonplace and a more regular part of teaching and learning, or in practical terms, what can be done.

Context matters and the concept of ubiquity does not mean that all children have equal and unbridled access to digital technologies at any given time. We are also wary of what comes with the simplistic and deterministic assumption of the digital divide and the implication of haves and have nots, where the divide will erode over time. Instead we suggest that there is a spectrum or gradient of access in and out of schools that should not be ignored by teachers and teacher educators.

Equally as important as recognizing the complexity of access is recognizing the range of abilities students bring with them when using digital technologies. Merely because children might be familiar with technologies does not mean that they are able naturally to use digital technologies to support or facilitate learning within the social studies classroom. As Livingstone (2010) asserted, "If we overestimate young people's skills, we may underestimate their need for support….Further, if we overestimate youthful skill, we may misunderstand their practices" (p. 4).

Given such a stance, teacher educators should be ready, willing, and able to provide opportunities (explanation and demonstrations) to use technologies specifically to support all student learning. Where the innovation in education was once simply using technologies, now we are refocused on how to use these technologies to improve student learning. This is a new sort of innovation that demands that teacher educators build examples, case studies, and models of the ways digital technologies can support learning.

At the same time, new technologies are still emerging. We should not ignore those new technologies, but be ready to approach them with a critical eye. Teacher educators and teachers must not lose sight of the forest for the trees and get caught up in the hype of new technologies. As Dede (1997) said, digital technologies are not like fire. Merely bringing them into the classroom does not radiate learning to students.

Given what is known about learning and cognition, the utility of this principle for teacher educators comes with placing a greater emphasis and focus on preparing teachers to critically evaluate and thoughtfully use technologies to facilitate learning in authentic, honest, practical, and theoretically aware ways. At a minimum, teacher educators must not shy away from new and emerging digital technologies, but rather demonstrate a readiness to participate in an ongoing and generative discussion to evaluate the ways various digital technologies can be used explicitly to support learning.

In essence, by changing the emphasis of our original guideline to focus more specifically on learning with or through digital technologies, our goal has been to shift the gaze toward the quality and forms of learning that may be enabled through access to digital technologies. We now return to our neglected notion of "active and meaningful" student learning and the necessity of preparing teachers both to theoretically and pragmatically articulate what is meant by learning and, subsequently, determine how and when to use digital technologies. Toward this goal, we offer the following recommendations for teacher educators to frame their uses of technology to support student learning (drawn from Brush & Saye, 2001; Donovan & Bransford, 2005; Doolittle & Hicks, 2003; Hicks, van Hover, Doolittle, & VanFossen, 2011; Saye & Brush 1999; 2002; 2006; 2007).

- Facilitate the process of student inquiry and action.
- Foster local and global social interaction to help students attain multiple perspectives on people, issues, and events.
- Facilitate student knowledge construction by building on students' prior knowledge and interest.
- Enhance the viability of student knowledge by providing timely and meaningful feedback.
- Cultivate students' academic independence by fostering autonomous, creative, and intellectual thinking.
- Process information into knowledge.
- Develop, apply, and assess strategic thinking.
- Provide the scaffolding necessary for complex learning.
- Engage in the social mediation of knowledge construction.
- Use reflection to develop self-regulated learning.

Given the reemphasis on student learning, teacher educators must prepare prospective teachers to recognize the diversity of students they will be teaching. As Barton (1998) said, "Inclusive education is about the participation of all children and young people and the removal of all form of exclusionary practices" (pp. 84-85). Preparing teachers to use digital technologies requires teacher educators to pay attention to the necessity of educating all children for citizenship, as opposed to teaching only those children who fit within the mini-me model that many preservice teachers carry with them into their first teaching assignment.

Today's classrooms contain diverse student learners in terms of ethnicity, class, gender, and sexual orientation, as well as English language learners and children with disabilities. The challenge for teacher educators in social studies and across all disciplines is to identify how digital technologies may support and "equip [all children] to take advantage of their citizenship" (Parker, 1996, p. 2). They must learn to engage in the types of literacy practices designed to support and enhance a student's ability to participate—make meaningful and positive life choices and decisions—and advocate for themselves across their life trajectories. The way students use digital technologies to support their learning within the social studies must be seen as a literacy issue rather than a technology issue (Leu, O'Byrne, Zawilinski, McVerry, & Everett-Cacopardo, 2009).

As a literacy imperative, Warschauer (2003) contended that "the ability to access, adapt, and create new knowledge using new information and communication technologies is critical to social inclusion in today's era " (p. 8). This important disposition should resonate with social studies teacher educators who are committed to preparing social studies teachers for inclusive classrooms. At a minimum, social studies teachers must be familiar with the practicalities of universal access and the range of assistive technologies that can be used to appropriately foster learning opportunities within the social studies classroom for all.

Roger Slee (2002) suggested that, although there is a "rhetorical commitment" to the concept of inclusive schooling, the devil is in the details. The challenge for teacher educators is to prepare beginning teachers to be able to shift away from "that which parades as inclusive schooling yet is clearly reluctant schooling" (p. 385) toward a differentiated model of instruction that continually seeks to leverage technologies, including digital technologies within various contexts and environments to enable students to learn to the best of their abilities.

Introduce Technology in Context(s) (2014)

The notion of context as we conceived it in 2000 was closely connected to instruction. In 2000, our argument was that any educational use of technology should be set in the context of teaching. Ironically, that was a reflection of a larger context that we were living in at the time. In the late 1990s new technologies were emerging that required technical skills that were new to teachers. As mentioned previously, this was the era of PT3, where the emphasis was on getting teachers ready to use technology in their teaching. A driver of this effort was the wiring of schools and the workplace demands of corporate interests, perhaps best represented by the Partnership for 21st-Century Skills (2014).

Although technology preparation activities varied widely, we saw lots of teacher education programs requiring standalone technology courses that focused on building up beginning teachers' technology skills. We wanted to break away from teachers' learning technology skills in isolation and strengthen the linkages between teachers' uses of technology and content. The need for those linkages has not changed today, but the larger context of teacher education has. In 2014 the technology preparation in teacher education has for the most part melted into courses on pedagogy and practice.

Today, technology permeates everything, and consequently, the relationship between teacher education students and technology has changed. Beginning teachers have more exposure to and experience using technology than ever before in their private lives. However, we cannot assume a direct transfer from their uses of technology in their private lives to their uses as teachers. There are important context-bound technology skills that preservice teachers are not well prepared for when they enter teacher education programs. Those skills require teacher educators' close attention.

However, we continue to think that teacher educators must teach the technology skills in the context of pedagogy and content, in methods courses and other courses where pedagogy and content are in the lead. The concept of technological pedagogical content knowledge (or technology, pedagogy, and content knowledge [TPACK]) provides a theoretical frame for doing just that (Mishra & Koehler, 2006)—as long as TPACK is not used by teacher educators and researchers as a simple static and myopic evaluative lens that fails to pay attention to the range of contexts that teachers work within. The danger is that TPACK is sometimes reduced to a measure of teachers' knowledge in the three overlapping domains that make up TPACK.

Instead, teachers must learn that technology, pedagogy, and content knowledge are developed in relation to one another in dynamic tension. Importantly, the larger context around teachers' TPACK is in similar tension.

Thus, we see two overlapping contexts operating. One is a metacontext that envelopes all aspects of a beginning teacher's life—the public and private, the academic and professional. Teacher educators must help beginning teachers traverse the boundary between their personal uses of technology and the professional applications they will make as educators. The second context is encapsulated by TPACK. It's a theoretical space where teachers reason about how best to use technology in their instruction. Teachers have to learn the dynamic tensions around the decisions they make to use technology. Any decision to use a technology is pedagogical in nature and will both reflect and impact how content is engaged in the classroom. Teacher educators need to be explicit about how to use technology in the classroom.

Cultivate and Support a Variety of Civic Practices with Technology

How are new technologies changing the civic experience? We asked that question 15 years ago and ask it again here. In 2000, we simply highlighted how the Internet could be used by teachers to access information and people to support the development of children's (a) "personal civic beliefs," (b) "capacity for social and public action," (c) "ties to their localities and the world outside," and (d) "awareness of past present and future" (Cogan, Grossman, & Lei., 2000, p. 50).

Our original guiding principle was based on the notion that with access to digital technologies opportunities existed for students to use the Internet as a digital portal to information and each other over time and space in never-before-seen ways. We provided illustrative examples of how the four characteristics/capacities offered by Cogan et al. (2000) could be taught through the use of Internet "to fulfill *the* mission of the social studies" ("Foster the Development of the Skills…" para. 2).

Illustrative examples are useful for beginning teachers; however, they are clearly time specific and were offered up without consideration of a deeper theoretical and pragmatic understanding of civic life and the Internet itself. One could view the 2000 principle as a product of its time and might still find value in the examples, but clearly such examples go only so far in the methods classroom.

What we now believe was missing was a more nuanced backdrop and problem space that would support teacher educators as they explain and demonstrate to and engage beginning teachers in considering ways to use digital technologies safely and mindfully to cultivate students' civic identities and engage with information and others in both face-to-face and digital settings.

Teacher educators must explore with preservice teachers how digital technologies shape and are shaped by education and examine the deeper theoretical and pragmatic understanding of the core purpose of social studies to prepare civic life. Thus, it becomes necessary to develop a historical view of the ways digital technologies, in both formal and informal settings and across different groups, are evolving, specifically, the Internet and associated Web 2.0 tools, and the implications of our continuing desire to use technologies for purposes that are intrinsic to social studies and citizenship.

Since 2000, our uses of the Internet and other digital technology have accelerated, as has our understanding of the stumbling blocks to accessing information, individuals, and

groups. Sunstein (2010) captured this change: "The Internet, then, has two important effects. It allows information to be provided to the world, in an instant, and it allows easy discovery, by anyone, of that information, also in an instant" (p. 106).

The ever-increasing flood of information and flattening of the systems for sharing opinions and perspectives has given rise to various forms of citizenship engagement while also enabling various forms of antisocial and antidemocratic engagement. Not every student, however, did or does have access to information and people through emerging technologies. Questions of quality access are still pertinent and should not be lost in the language of *ubiquity* today.

As we considered this principle anew, we recognized that the relationship among the ways we conceived of civic education—as skills, knowledge, dispositions, and participation—was unclear. Having immediate access to receive, create, curate, share, and distribute information in the very public agora of digital space does not mean that people will somehow naturally do this in thoughtful, meaningful, and compassionate ways (Rheingold, 2012). As the Knight Commission on the Information Needs of Communities in a Democracy (2009) warned, "An increasingly uninhibited information culture creates opportunities not only for social benefit, but also for slander, harassment, fraud, pornography, spam, theft, intrusiveness, invasions of privacy, and all kinds of falsehoods, from innocent mistakes to intentional mischief" (p. 63).

Additionally, others have warned that actual access to the Internet and, more specifically, the impact of "Googlification" is diminishing "our abilities to know, in depth, a subject for ourselves, to construct within our own minds the rich and idiosyncratic set of connections that give rise to a singular intelligence" (Carr, 2010, p. 143).

Such concerns are valid and more clearly articulated and evidenced today than in 2000. What we are now recognizing is that how you "stream video from your phone cam, or update your Facebook status matters to you and everyone, because the ways people use new media in the first years of an emerging communication regime can influence the way those media end up being used and misused for decades to come" (Rheingold, 2012, p. 1). While the question of availability and quality of access to digital technologies is important, equally important is the question of how to prepare young citizens to use digital technologies in ways that promote the knowledge, skills, and dispositions that foster a contextually aware and mindful (though not uncritical) stance and approach that values the "common good" (Warschauer, 2003, p. 38).

How one learns to use digital technologies in this way must now be considered a literacy issue. A literacy issue that teachers—especially social studies teachers—must be prepared to address in terms of educating future citizens for full participation as members of informed communities.

Operationalizing and unpacking the nature of this literacy work is vital for methods classrooms in the digital age. Such literacy work includes discussions of the development of digital footprints and identities in relation to privacy and the protection of others. It also includes designing problem spaces and inquiry arcs for students to evaluate and recognize the sort of information cocoons individuals sometimes fall into and rarely move from or break out of.

Whether online or otherwise, these information cocoons perpetuate self-reinforcing ideas, sources of information, and tightly coupled connections to specific individuals, groups, and institutions that inhibit people's ability and willingness to consider

differences of opinion that flow within the kaleidoscope of human ideas and experiences. With the customization of user experiences online and the collection of personal information that shapes and even distorts information and opinions, falling victim to what Pariser (2011) called "filter bubbles" is becoming increasingly easy.

In the filter bubble, there's less room for the chance encounters that bring insight and learning. Creativity is often sparked by the collision of ideas from different disciplines and cultures. Combine an understanding of cooking and physics and you get the nonstick pan and the induction stovetop. But if Amazon thinks I'm interested in cookbooks, it's not very likely to show me books about metallurgy. It's not just serendipity that's at risk. By definition, a world constructed from the familiar is a world in which there's nothing to learn. If personalization is too acute, it could prevent us from coming into contact with the mind-blowing, preconception-shattering experience and ideas that change how we think about the work and ourselves. (p. 15)

Given this evolving context, it is more important now than ever to prepare social studies teachers to cultivate and support students' civic practices in school. Kahne and Westheimer (2004) noted, however, that no straight line exists from knowledge, skills, and dispositions (i.e., values) to actual civic participation.

As educators interested in schooling's civic purposes, we maintain that it is not enough to argue that democratic values are as important as traditional academic priorities. We must also ask what kind of values. What political and ideological interests are embedded in or are easily attached to varied conceptions of citizenship? Varied priorities—personal responsibility, participatory citizenship and justice oriented citizenship—embody significantly different beliefs regarding the capacities and commitments citizens need in order for democracy to flourish; and they carry significantly different implications for pedagogy, curriculum, evaluation, and educational policy. (p. 263)

Kahne and Westheimer argued that political beliefs and related curriculum and instructional goals determine success and outcomes in civics education. They suggested three visions of citizenship reflecting the democratic values underlying civic education:

- The personally responsible citizen.
- The participatory citizen.
- The justice-oriented citizen.

Educating for civic life is thus complicated by student experiences within our increasingly messy information culture while being mediated by slippery democratic values that are personal in nature. While Kahne and Westheimer (2004) broke down what these values look like in practice, teacher educators need to build up models to support students for learning within these ideological contexts. Categories can be elusive. Characteristics and examples of particular types of citizens are useful, but we also need counterexamples. Ultimately, teachers need to recognize that civic life includes a range of generative practices that are layered and interlaced. In addition, preparation for civic life is literacy work, which is impossible without consideration of technology.

Assuming that participation in civic life requires skills (i.e., information literacy skills) and dispositions (i.e., democratic values), the challenge is for teachers to model and use academic experiences to engage students with and solve civic problems. We want students to have an academic experience, to engage with civic issues and problems while grappling with the myriad of technologically generated complexities for accessing and using information and communicating and acting with others throughout society.

Such work is difficult. Imagine teaching about the Neolithic Revolution. How might a teacher support students' learning about the Neolithic Revolution with attention to preparation for civic life through technology-related literacy practices, given a recognition of democratic values? One possible avenue is through studying the value and impact of water. Ancient humans harnessed water, and to this day humans struggle to manage and appropriately use water. The masterful human innovation of irrigation unleashed millennia of public problems. As they study the Neolithic Revolution, teachers can provide students opportunities to examine information, accessible now through increasingly transparent technologies, in the context of their personal judgments and through the lens of democratic values.

Students can also begin, though technologies, to see themselves and their local problems in global settings. In terms of preparing teachers to use digital technologies in global contexts, it becomes important for teacher educators to illuminate the ways and practices that social studies teachers can, in the words of Hansen (2011),

play a dynamic role in helping students appreciate why technology that feels liberating may in other cases overwhelm or even undermine their aesthetic, moral, and intellectual sensibilities. Teachers can model uses of technology that do not substitute for spontaneity, imagination, and thinking, but are appropriately supportive of them. (p. 51)

Hansen contended that cosmopolitanism offers a capacity or disposition that is particularly useful as a framing mechanism for students to "be open reflectively to the larger world, while remaining loyal reflectively to local concerns, commitments, and values" (p. xiii).

We opened this section by suggesting that teacher educators should explore with preservice teachers how digital technologies shape and are shaped by education and to examine the deeper theoretical and pragmatic understanding of the core purpose of social studies to prepare for civic life. Within the methods courses, preservice teachers must feel supported yet challenged to play within and through the field of digital technologies and examine the opportunities to engage in the type of systematic literacy work that is required in the preparation of flexible and mindful citizens in the digital age.

Contribute to the Research and Evaluation of Social Studies and Technology

In developing the 1999 guidelines we recognized that research and evaluation around social studies and digital technologies was clearly in its adolescence (Berson & Balyta, 2004). As a product of its time, the 1999 principle reflected an idealistic belief in the potential of digital technologies to *transform* teaching and learning in social studies, during what O'Brien (2010) described as a "period of ambivalence" and "inertia … as the nation's attention turned to standards-based educational reform" (p. 212).

While empirical research in the field of digital technologies and social studies was limited, a small but growing number of cheerleading and how-to articles (Friedman & VanFossen, 2010 p. 53), alongside calls to wake the metaphorical "sleeping giant" (Martorella, 1997), in order for social studies to remain a relevant field of study in the information age (Fontana, 1997) emerged within the literature. In light of this context, the 1999 principle called for researchers to "continue to evaluate the influence of technology on social studies, and should seek to provide exemplary models for the infusion of technology within the social studies methods of instruction."

In discussing the nature and value of professional practice, Shulman (2007) observed "the work of both scholarship and practice progresses as a consequence of dialogue, debate and exchange" (p. 1). Over the last 15 years the foundations for a generative, evidence-based dialog around the nature and impact of digital technologies has clearly developed (see Diem & Berson, 2010; Hofer & Swan, 2014; Lee & Hicks, 2006; Swan & Hofer, 2008).

Several avenues of research have begun to emerge in an effort to develop a more theoretically (e.g., see Crocco, 2001; Doolittle, 2001; Doolittle & Hicks, 2003; Lee, 2008) and empirically (e.g., see Brush & Saye, 2001, 2002; Doering & Veletsianos, 2007; Hicks & Doolittle, 2008; Larson, 2003; Manfra, & Lee, 2012; Saye & Brush, 2002, 2006, 2007; Shin 2007) informed literature base within the social studies.

Of note, Swan and Hofer (2008) identified the utility of research examining (a) the potential of digital technologies as scaffolds to support disciplinary thinking; (b) the nature and utility of technology use within teacher education programs and K-12 classrooms; and (c) the uses of digital technologies as interventions to support and sustain inquiry and problem-based learning over time.

Regardless of the shifting educational terrain over the last 15 years, the necessity of continuing to engage in research and evaluation of social studies and technology remains as important as ever. Given the shift in emphasis of the new guidelines, a concerted level of attention should be turned toward the complex dynamic interactions between teachers, content, students, and context(s) (Ball & Forzani, 2007). The uses of digital technologies are shaped within and through the context of the "antecedent subject cultures" and institutions within which they are embedded (Goodson & Mangan, 1995).

The contextually and methodologically aware research of social studies teacher educators and researchers must now, more than ever, mature and pay closer and more attention to the importance of facilitating student learning and deep processing across the disciplines that make up the social studies. Given a new era of standards marked by the C3 Framework, the timing for such a concerted research gaze across various contexts and educational landscapes is upon us (Hofer & Swan, 2014).

Conclusion and Going Forward

Our focus 15 years ago was on the Internet and the materials accessible online. Since then we have seen the emergence of Wi-Fi (wireless) and Web 2.0 technologies, ongoing laptop and iPad initiatives, the rise of course management systems, the ongoing investment in instructional technology infrastructure, the introduction of interactive whiteboards alongside personal response systems, and the somewhat uncritical labeling of young people as "digital natives." All of these developments have played into the concept of 21st-century classrooms.

As a result, we see great value in supporting teachers to develop the critically aware dispositions that enable them to be ready, willing, and able to identify and engage with online professional learning sites while also reaching for innovations afforded by digital technologies to meet their immediate instructional needs.

Looking ahead, we see cutting-edge technologies as opening new opportunities for innovations in social studies to visualize information, work online in collaborative groups around a question, create an instant feedback loop between teachers and students, and augment reality to enable students to engage in places and experiences never before

possible. All of these innovations move students toward different ways of producing knowledge and examining perspectives. It is not only about using the newest and shiniest technologies, however. It is the creative and mindful use of these technologies to support what we know about how students learn that is paramount.

Notes

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Author Information

David Hicks
Virginia Tech
Email: hicks@vt.edu

John Lee
North Carolina State University
Email: jklee@ncsu.edu

Michael Berson
University of South Florida
Email: berson@usf.edu

Cheryl Bolick
University of North Carolina at Chapel Hill
Email: cbolick@unc.edu

Richard Diem
The University of Texas at San Antonio
Email: richard.diem@utsa.edu