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Digital Technology and the End of Social Studies Education

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In Fall 2000, when *Theory and Research in Social Education* (TRSE) first dedicated an issue to technologies in social studies education. Neil Postman contributed a View Point piece to this issue. Postman, who died in 2003, was an interesting choice because he was an outspoken critic of educational technology who believed that, as he said at the time, "the new technologies both in and out of the classroom are a distraction and an irrelevance."

I knew Postman slightly and admired him greatly. Like many others, my views on literacy and technology have been shaped partly through encounters with his writing and thinking. With Postman's death the educational community – and particularly those interested in educational technologies – has lost a powerful critical voice that demanded we be self-critical, and true to the larger ideals and purposes we bring to our educational work. I can think of no better way to share my own evolving viewpoint on digital technologies in the social studies than returning to Postman, and having a dialogue with him as it were, about those challenges that social studies education faces, and the place of technologies in helping us address them.

Postman's thought offers a number of touchstone questions for social studies educators and educational technologists:

- What attitude should educators have to technologies whose main cultural role seems to be to undermine print literacy – the very thing that schools are most trying to cultivate?
- Why do we maintain our faith in technologies as agents of educational reform when we are confronted, again and again, with their failure to change schooling? Why do we persistently ignore or downplay the unintended consequences of technologies?
- How can we use technologies well if we don't know what the purposes of schooling are?

As he neared the end of his career, Postman increasingly posed questions about the 'end' or purpose of education. To the long list of crises in public education he added his own, which he believed was by far the most fundamental: a crisis of meaning and purpose. For Postman, our lack of any transcendent narrative about who we are as a culture, a people or a civilization severely hobbles education. The 20th century collapse of all such narratives -- the triumphalist American story, the socialist story, even the nightmarish totalitarian story which we can agree we're well rid of – has left a vacuum of meaning. We strive to teach children without knowing why, he feels; or rather, our answers – to help students 'learn skills,' 'prepare for the workplace,' or 'learn to think' – are narrow, technocratic, and ultimately inadequate, for they fail to frame and give meaning to children's learning, fail to "organize their understandings and generate enthusiasm and purpose," for children, for teachers, and for the public which must support education: Learn to think for what purpose? Hence the questions Postman poses to teachers: "What story do you wish education to tell? … 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?" Postman's insistence that large background narratives are critical if we are to give meaning and purpose to education is one of his most distinctive contributions.

In the context of this crisis of meaning, Postman viewed all questions of technique – including questions of which technologies to use in teaching, and how – as distractions. Our technocratic way of thinking, for him, is one of the main things that prevents us from clarifying our purposes, the stories we want education to tell. If you're concerned with technologies, for Postman, you're a technocrat -- obsessed with technique, with efficiency and effectiveness, the narrow 'how' of education, not the 'why' and 'to what end.'

One can question these perspectives, and indeed Postman would want us to. Do we really need large background narratives to give ethical meaning to what we do as teachers? Does an interest in technology necessarily imply a *dis*interest in meaning and purpose, in the 'ends' of education?

Taking my cue from Postman, I will address these questions – and those above -- by telling a story of my own. I'll offer a wandering narrative – and an old-fashioned one at that – common in the religious stories that Postman saw as the prototype for all cultural stories: the narrative of faith, tested by doubt, emerging reaffirmed.

Initial Faith

My work over the past ten years has been animated by the belief that new technologies have important roles to play in invigorating

the social studies. As I've explored them in the computer lab and the classroom, I've seen a whole host of ways that digital tools can enliven social studies teaching and learning, and make it more rigorous. Here are just a few examples:

- Fourth graders using digitized oral histories from the Depression to create 'found poetry' about the lives of immigrant Americans.
- Middle school teachers using whiteboards to teach students how to parse complex political cartoons, revealing layer after layer of meaning.
- Struggling adolescent readers understanding and enjoying a historical novel because they have the support of digital scaffolds that help them unpack unfamiliar words and phrases.
- High school students querying a census database to test their ideas about how income and education are related.
- A classroom full of global studies students making predictions about vegetation and climate as their teacher moves about the globe using Google Earth.

In each of these situations teachers are using technology to slow down learning, to focus on thinking, to help students deal with more complex primary materials and more meaningful problems, to foster democratic skills of dialogue and debate. These are things I firmly believe are critical to improving learning in the social studies and that technologies can powerfully support.

When I look about me I see that I'm not alone in this belief – far from it. My faith seems to have a large number of influential adherents, among them researchers, policymakers, schools, and departments of education. Recently I've noticed that among the articles, conference papers and proposals that come across my desk related either to social studies or to technology, two works are among the most frequently cited -- Bransford et al.'s *How People Learn* (2000) and Donovan et al.'s *How Students Learn* (2005). These influential compendia of cognitive research make a powerful case for slowing down and 'scaffolding' learning in social studies and other disciplines – constructing tasks that make more room for student thinking, including the misconceptions that learners bring – in ways that technologies can support well.

Social studies policy-setting organizations have weighed in, too. The National Council for the Social Studies (NCSS) released a technology position statement with guidelines that call on social studies educators to "use technology to support learner-centered strategies that address the diverse needs of students," and "apply technology to

develop students' higher order skills and creativity" (NCSS, 2006). If these phrases ring familiar, it's because they represent a wide consensus that education faculty have been promoting for many years in their teaching about technology.

Though Postman might not have recognized it, this consensus about technology does have an underlying educational vision or philosophy, a narrative if you will. It is, fundamentally, the early 20th century narrative of 'progress' understood the way the Progressives saw it – with scientists and educators, broadly understood, as key agents. In this story, as science strives to build an adequate picture of the new social forms that are constantly evolving under industrialization (and now post-industrialization), humans come to better know how to shape and participate in them, more justly and more equitably. Education, meanwhile, is the premier activity and institution through which humans not only adapt to, but also shape, their ever-new circumstances.

More than anyone has recognized, over the past two decades, our views of educational technology have been shaped by this vision. Its major proponents have been a particular tribe of technologists to whom I belong, who might be called 'Progressive Tinkerers.' For more than twenty years we progressive tinkerers have worked in universities and schools of education, in non-profit R&D think tanks, in educational and corporate foundations, and in government agencies, to fund, develop, and study new technology designs that hold promise, we believe, for new and far better kinds of instruction. Our beliefs about learners and tools come via Dewey and Vygotsky, and have been informed by the 'cognitive revolution' that in the last thirty years has given these ideas scientific weight:

- The child as active learner, a 'scientist in the crib' and in the classroom.
- Thinking and learning as social acts.
- The classroom as laboratory, where children build and test identities as well as academic knowledge and skill.
- Technologies as tools that amplify and extend fundamental human capacities to observe, understand, and communicate about the world – tools that give us rich data, help us manipulate and think about it, and connect us with others around it in new and powerful ways.

These ideas have been imprinted on successive generations of educational technology, and the way people view them – desktop computers and software, networked computing and distance learning, and now the Web, hand-held technologies and social networking tools.

Enter Doubt

This is not to say, however, that the progressive tinkerer vision has shaped how teachers and students use technologies in schools – indeed, it has not, for a variety of reasons that I want to explore. The fact is, we need to acknowledge a persistent gap – the gap between what we progressive tinkerers believe, with the increasing support of research, are appropriate and powerful uses of technologies in social studies learning, and the technology uses that actually occur in schools and classrooms across the country.

In social studies, for example, tinkerers like me believe in and advocate for primary source archives and research, databases and debates, simulations, and social role-playing. What happens in the vast bulk of schools is that teachers and students hardly use computers in instruction at all; when they do it tends to be for information retrieval or the simplest form of authoring -- students access the Web page for their congressman, do a stock-watch activity, or piece together a report on a historical figure using PowerPoint. Digital technologies, far from making social studies and history more lively, more rigorous, and more grounded in authentic sources, seem hardly to have made a dent in what teachers and students do.

What are the reasons for this? Three types of explanations have been put forward, and while each of them has elements of truth, all of them are inadequate I believe – and not coincidently self-serving for technology enthusiasts. First, teachers were to blame; then schools were to blame; now, the testing and accountability regime is to blame. It is worth considering each of these explanations in turn, for a moment.

For a long time teachers were identified as the source of the problem. It was their 'resistance' to technologies -- out of generational habit or some peculiarly conservative professional mind-set – that had to be overcome in order for technology innovations to take root and 'stick' in schools. Historian Larry Cuban and others have succeeded in exploding this idea fairly completely, though the myth of the 'resistant teacher' lingers in the informal culture of educational technologists and other would-be reformers. In his research on the history of technology reforms, and school reforms more generally, Cuban found again and again that reformers' initially high optimism for curricular innovations gives way first to disappointment when schools fail to adopt them, and then quickly to blame -- most often blaming the teacher. Reformers and innovators, he finds, have rarely examined their own often contradictory assumptions and expectations, the complexity of the school settings they seek to intervene in, nor the myriad realities and requirements that teachers must respond to everyday. More recently, Cuban has countered the resistant teacher myth by pointing to evidence that teachers are in fact robust and enthusiastic computer users, but *outside*

the classroom – at home, in their personal lives, and in their lesson planning. If teachers are as skilled as any other group, he reasons – if they enjoy their online shopping and banking, their email, their Google searching, and their vacation planning as much as anyone else -- their decision not to use computers instructionally is just that, a decision, and one that probably has its sources elsewhere. Teachers, he believes, may simply be judging computers and software to be too finicky and troublesome to fit in well with the demands of the school workday – in short, not worth the trouble.

If teachers aren't the real problem, then, it must be schools. Another common habit of technologists is to point to the structure of American schooling itself as the reason why technologies are persistently underused in schools. This argument has intuitive plausibility, especially for social studies people who like technology. The refrain goes like this: American schools owe their factory-like organization (large numbers of students assembled to learn fixed bodies of knowledge and skills) to early 20th century America's industrial society and economy. One hundred years later our economy and forms of social organization have changed dramatically, based in large part on our exploitation of information technologies, yet schools as institutions have not. Schools cannot make room for innovative uses of technology until, as institutions, they are reformed and restructured to look more like other 21st century organizations, chiefly the commercial workplace: children working in teams, researching and solving problems with the help of a supervisor or coach, etc.

During the 1990s this analysis led people to explicitly link 'technology and school reform,' that is, to try and pair technologies with curricular reforms like collaborative learning, project-based work, and authentic assessment. Together, it was hoped, new technologies and school reforms would 'break the mold' of factory-model schooling and usher in a new era of learning. (As an indication of the general *zeitgeist* during this period, International Society for Technology in Education's practitioner journal, *Technology and Learning*, was subtitled 'the magazine of technology and school reform.') An oft-cited idea here was that while technologies were not themselves 'fixes' for schools – after all they were only 'tools' – they were frequently 'catalysts' for school change, because they interrupted the teacher-centered dynamic. Put a computer in the classroom and give students a project to do on it, and students would work differently, with more motivation and more collaboration; teachers, seeing the change, would adjust and relax, becoming facilitators of learning, the 'guide on the side' instead of the 'sage on the stage.' The problem here is that it didn't happen. Once again, would-be reformers overestimated the power of their materials and methods, and underestimated the strength and resiliency of everyday school practices and institutional norms.

More recently, our earlier nationwide interest in school reforms has given way to a single-minded emphasis on achievement and accountability. Amid the general hue and cry over too-much-testing, technology people can be heard loud and clear: how can our tinkering-oriented materials and methods succeed in a climate where people are teaching to the test? But I think the complaint about testing helps us explain non-use of technology too easily. Once again, we're off the hook. Teachers, we can imagine, would likely use our powerful tools if only they didn't have those onerous tests to prepare students for, tests which demand 'coverage' over depth in U.S. History, for example. Yet, while it's true that structures like testing exert influence on teaching, it's also true that, in social studies at least, most educators have far more freedom to shut the door, and teach the content they wish, in the ways they wish, than we think; far more room to teach well – or conversely, waste lots of students' time – than we tinkerers like to believe.

Those of us who advocate for rich uses of technology within the social studies and other subject areas need to take a more critical look at our own thinking and practice, and especially about how we interact with schools and school people. I'll discuss three issues around which we have allowed – and sometimes even supported – uses of technology that have yielded few benefits for students, teachers, and schools: poor technology-based assignments; unrealistic expectations for what teachers can accomplish with technologies; and a flawed belief in children's 'natural' fluency with information technology.

Poor Assignments

Most often when I go into social studies classrooms, I see technologies being used for tasks that Dennie Palmer Wolfe once characterized as 'scribal literacy.' Wolfe was describing the kinds of routine writing tasks that language arts teachers used to give students – for example, writing a business letter. The focus in scribal tasks is on getting the form right, including all the necessary components, and carefully following the template. A business letter? OK, you've got a date at the top, the addressee, a greeting, the 'body' -- and make sure you don't forget the salutation! These tasks may seem to be authentic (since 'the business of America is business' as Calvin Coolidge said, what could be more authentic than a business letter?), but what students are really doing is learning to follow a set of arbitrary rules, or conventions. Meaning, thinking, and purpose take a back seat to reproducing the form correctly.

The tasks we give students in social studies may *seem* more complex – for example, 'Research and create a PowerPoint presentation about Westward Expansion that will persuade immigrants to move and settle in the West.' Yet these kinds of tasks are as ruled by format and as riddled with convention as the business letter. It's there in guidelines

and 'rubrics' we give students*: "In your research cite four sources of information, and make sure only two of them are online – and no Wikipedia! In your PowerPoint, every slide should have a picture, sound, or animation, and you should include a caption for each one. Use colors and fonts carefully, and remember, be creative! The rubric gives persuasiveness 20 points, and creativity 15 points*." These kinds of tasks are ruled by process, by a 'recipe' approach to both production and assessment: if all the ingredients are there, the work is good. Never mind whether the task as explained makes intellectual or historical sense. What matters is the recipe, and whether students have followed it attentively or not.

I have similar concerns about the ubiquitous 'web-quests' that many social studies teachers have been told represent the ideal fusion of web technology and good pedagogy. Web-quests are thematic investigations in which students gather information on an 'authentic' problem or topic from a set of teacher-selected websites. Students often work in teams, dividing responsibility for summarizing information on different parts of the problem, and they work together to create a final presentation or product.

Projects and tasks such as these often suffer from at least three glaring defects. First, as I have suggested, they often represent the triumph of process over substance. ("Create a timeline of the history of chocolate. Create a flowchart of the cacao tree. Create a presentation on a chocolate-producing company. Create a brainstorm mindmap about beginning your own chocolate business.") Second, they are vague about the critical intellectual details. Though they often appear to be formally elegant, many Webquests fall apart when one tries to step through them as a student would. Enormous gaps loom between the challenge posed (e.g., write a first-person journal of the battle of Gettysburg) and the sources provided (e.g., newspaper accounts, vast government archives, commercial websites of varying scope and quality). The supports students require for making intellectual sense of the sources – deciding what is relevant and what is not, evaluating the source of the information, etc. -- are nowhere apparent. Third, and finally, Webquests tend to be a-disciplinary. That is, in the quest for relevance with students, they typically sacrifice the historian's and the sociologist's questions and habits of inquiry. This is not to say there are *no* Webquests with serious historical investigations; just that these are in the great minority.

Unrealistic Expectations for Teachers

Another of the things we progressive tinkerers have is an unrealistic set of expectations for what teachers can and should be doing with and around technologies. Most of the tools we advocate using – simulations, digital archives and databases, rich video narratives, dynamic maps – are unwieldy to manage in the classroom *and* require

a great deal of prior planning to use effectively. This is true even for technology-adept teachers working in well-resourced schools. When I ask skilled teachers how much time they've spent preparing the technology-enhanced lessons or activities they're demonstrating, I seldom hear that it took less than four hours. If it takes experienced teachers who are comfortable with technology this long to prepare a successful classroom activity, how long must it take more novice teachers?

Our lack of realism about the time and effort required to prepare and manage 'meaningful' technology is just part of the problem. New media and materials also demand a broader scope of teaching knowledge and skill. The NCSS technology guidelines make this point well. As the guidelines point out, studies educators now need to know more than how to use educational technologies appropriately in their teaching. Digital technologies are such a force in national and global life – changing economic, political and human relationships at a breathtaking speed – that social educators have an obligation to spend time discussing technologies and their social and historical roles in the classroom. At one level this is inarguable – how could a conscientious social studies teacher *not* teach students about technology's powerful and changing role in history? But NCSS points out that the problem is more complicated than this. Since large historical shifts -- like the growth of mass media at the turn of the 20th century -- are hard for youngsters to grasp, teachers should have students reflect on current technologies and how they have been changing communication and social interaction, even in the span of their short lives. A good place to start, they recommend, is with the very uses that students are immersed in their daily lives – cell phone messaging, instant messaging, social networking, photo sharing, networked gaming.

This is an intuitively attractive idea – and, I have to admit, a highly impractical one. Technology marketers have difficulty charting trends in young people's media use, even while spending millions trying to do this. The MacArthur Foundation has just funded academic researchers to the tune of several millions of dollars to find out how 'digital kids' use cell phones, IMing, and MySpace to build new social worlds, to communicate, work, and play. I agree that it would be wonderful if social studies teachers saw the historical situations they teach about as continuous with the world today. But NCSS doesn't explain exactly how teachers are supposed to feel capable of guiding a classroom discussion of emerging tech trends in kids' lives.

Uncritical Beliefs about Students' 'Natural Fit' with Digital Technologies

Children, immersed in new media, learn differently today. This refrain is so common that it has taken on the aura of the self-evident. We hear it again and again: Children have a natural affinity with digital media that we, as adults, lack. Wired with digital media,

children have adapted whole new ways of learning – visual, interactive, multimedia – that we boomers only dimly perceive. What's more, schools have been dangerously slow to recognize and respond to these changes; thus they are constantly playing a losing game of catch-up with Generation X, Y, or Z. And in doing so they flirt with something more than educational failure – they flirt with irrelevance. The keynote speaker at an ed tech conference I attended recently put it this way as he flashed staggering usage curves for MySpace, Wikipedia, and YouTube on the screen: "*This* is where kids live and learn; if schools and teachers want to be relevant, we'd better get there too – and fast."

While it is easy to scoff at the alarmist tone of language like this, the underlying claim about kids and learning often goes by unchallenged: kids learn differently now, and schools have got to get on board. Now, I'm not saying that children's use of networked games, cell phones, YouTube, and MySpace are not interesting or important for understanding their social, cognitive, and emotional development; these matters are rich with possibilities for empirical investigation, and are finally beginning to get due attention from researchers. But when someone generalizes about children's *changed habits of learning,* and further, when they argue for educational designs that would cater to these changes, we should be wary. To date, there is little empirical support for the 'digital learners' thesis – the idea that children who are heavy users of digital media, for example, learn in fundamentally different ways than those who are casual or non-users.

Large generalizations about 'digital kids' and their affinity for new styles of learning have a pernicious consequence – they can blind us to the actual literacy gaps that exist in children's use of digital media. If using digital tools well actually places cognitive demands on children that they need help with, we'd better attend to and address them. Lately, researchers examining children's fluency with standard digital tools like web browsers, word processing programs, and the like, have found that youngsters are far *less* fluent with the features of these programs than has been thought. We are beginning to recognize how the literacy demands of common media tools vary according to the *purpose* to which they are put. Many children who are fluent and at ease with the 'commercial Web' – i.e., who fluidly find and browse their favorite popular media sites, play games and communicate with friends, share photos, etc., have difficulty when it comes to even basic uses of the 'informational' or 'academic Web' – things like executing a competent search; reading and making sense of text and graphics; identifying the source of information; copying, saving and citing information, etc. (This is to say nothing of 'higher-order' skills of categorizing, summarizing, and evaluating web information and the perspective(s) it represents.)

In research I have done on children's use of the Web in low- and middle-income homes, I found that in both communities adults consistently overestimated the skill and competence their children brought to basic web tasks like these. In short, talk about 'digital learners' may rest on a fundamental category error: We watch kids fluently using some new computer application or other and think we see evidence of something generic -- children's fluency with 'technology' writ large, a whole host of new modes and tools for grasping and communicating about the world. What we actually see is their fluency with a specific set of media conventions, for a certain (and from an educator's perspective, highly limited) range of purposes. Children are indeed *doing* different things with their time, and their minds – and these things merit serious investigation – but the leap to conclusions that they now *learn* differently as a result are premature to say the least.

Ignoring the literacy demands of new technologies may have especially dire consequence for children in disadvantaged homes and schools, who have not grown up with parents and siblings showing them how to find, cut, paste, and, customize information using the computer. This was brought home to me in an upper Manhattan public school classroom not too long ago. I watched Valentine Burr, a social studies curriculum instructor at Bank Street College of Education, conduct a simple web-learning activity with a mixed group of 6th graders who, like nearly all their peers, were from low-income homes and were reading and writing just at or below grade level. During a rainy lunch period the children, seated together at computers around the room, moved fluidly through a host of game screens and webpages, eagerly sharing with each other images, gossip and statistics about their favorite sports, music and movie stars, emailing one another jokes and videogame cheat codes and so on. But when lunch was over and they turned their attention to the Web task (which called on them to read simple web text about sea creatures called isopods, examine photos to identify their characteristic features, and draw and label one of the animals) the students had a host of problems. They accidentally closed the webpage and couldn't get back to it. They had difficulty reading and understanding even relatively simple vocabulary. They glanced at the images, but didn't read their captions or notice the fact that they could be enlarged to examine closely. They soon clicked on a 'banner' at the top and away from the target pages, and only returned to the task with constant coaching. Their lack of a shared vocabulary for common web elements – the 'browser window', the 'history' function, the 'scroll bar', etc. – further impeded them, so Valentine, in order to make the project a success, ended up teaching them this vocabulary carefully.

In contrast, the 6th graders I observed in another study, all from middle-and upper-middle income homes and schools, didn't need this kind of basic help. They showed a far greater degree of fluency

in reading and working with basic informational web pages for school tasks. While they had difficulty at 'higher order' skills like judging the reliability of different pages, their capacity to find appropriate information, read and make sense of onscreen text and images, summarize the main point, and keep track of and get back to pages they had seen and left – in short, their ability to negotiate the medium for standard academic tasks – was far better than that of their more disadvantaged peers. When interviewed about why, these relatively privileged kids pointed to several things – their achievement-oriented parents, who constantly 'back-stopped' their use of the computer for homework and projects; their skilled older siblings and peers, who showed them lots of practical in and outs; and last, their school librarians, who occasionally taught them to do things like search the web and evaluate a source. The real 'digital divide,' we have begun to recognize, will be less about access to technologies themselves and more about who gets to develop the human capital – the cognitive and affective skills and habits – required to use these tools well for a range of purposes.

Hope (if not Faith) Reaffirmed

At this point my narrative may appear to be nothing but a tale of woe. I have listed a host of doubts about the project of reforming social studies teaching and learning with technologies -- doubts about the quality of the technology assignments we give students, about our unrealistic expectations for teachers in using technologies, and about our tendency to downplay the literacy demands that students confront in using digital tools for learning. I've also questioned the stories we tell ourselves about why technologies have made so few inroads into everyday classrooms, suggesting that our typical explanations – resistant teachers, archaically structured schools, and now, a teach-to-the-test regime – let us off the hook a little too easily.

With these doubts registered, I want to return to the faith I professed at the outset – the faith that technologies *do* have a role in making social studies teaching and learning more lively, more rigorous, and more grounded in problems that matter to students and their communities. Given the doubts I've shared I think I'll 'downgrade' my faith to something more reasonable -- hope. Yet my hope is a shared one, I have suggested, and one grounded in an underlying narrative or vision that I think Neil Postman would recognize as an 'end' of education: the early 20th century story of science and education as tandem human projects; of human communities using available tools to better grasp the complexity of natural and social systems, so that they can be shaped more rationally, more justly, more equitably, and with ever greater participation of voices heretofore left out. That this story does

not now command deep and unquestioned belief in the population at large does not invalidate it. Indeed, as I have also suggested, the work of cognitive and brain scientists in the past two decades has greatly strengthened the evidence that this is indeed how people learn: by building and testing models of the way things work, in social settings, and gradually substituting 'better' models for 'worse' ones.

I believe that working from this hope and this evidence, we can be more confident in our research and design agenda for improving social studies education with technologies, *if* we keep in mind the risks that Postman warns us about – the easy slide into technocratic thinking and the tendency to overlook the unintended consequences of technologies. We can minimize these risks if as researchers, designers, teacher educators, and classroom teachers, we strive to continually articulate our beliefs about the *why* of social studies education, and ask whether our uses of technology are getting us closer to those ends that we most desire, or further away.

The articles in this issue of TRSE nicely sketch what I see as the outlines of a renewed agenda for improving social studies education, in part through the use of new technologies: a focus on better teacher preparation, better environments for learning, and better research that helps us confront our design experiments with meaningful evidence. In each case, 'better' means, in part, closer to the Postman ideal – able to help us clarify, for ourselves and our students – the *ends* of education, as well as the means.

Disciplines, Data and Dialogue

Building on the portraits of improved practice presented in the articles here, I will mention two elements that I believe need to be far more present in social studies education, at the pre-service and K-12 level: Clearer disciplinary perspectives; and easier ways of working with data within these perspectives. Technologies, if carefully designed, can be helpful in both areas.

We need to strengthen disciplinary perspectives in social studies – i.e., help teachers and students learn to think, talk, and work together like historians, geographers, or sociologists – for many reasons. In this context, disciplines are important because they are carriers of human values, norms, and even 'ends.' History, for example, is the sustained effort to apprehend past events, people, and the causes that moved them, yet it is also a meditation on the limits of our knowing, a lesson in humility. Just as we can never grasp the full complexity of past events and their causes, we can never know precisely how the historical 'other' felt, no matter how many letters, photos, and diary entries we have. The real reason to study history, psychologist and history educator Sam Wineburg argues, is because it *humanizes* us.

If we were to work from this premise, this 'why' of social studies education, we might well arrive at a somewhat different set of learning activities for students and teachers than we often see. We might have children (and teachers too) forming historical arguments and hypotheses, and justifying them with evidence that they learn to read carefully and critically. We might have them hold one another's use of evidence accountable to some standard less than proof but more than opinion or conjecture – warranted belief, perhaps.

In this kind of setting, the role that historical and social science data plays would be critical, and somewhat different than it is in most social studies classrooms. Primary data – speeches, letters, census records, original maps, photographs, pamphlets – would be prominent, but they would not necessarily be the only information available. Learners would also be able to consult secondary sources – narrative overviews, maps, numerical charts, timelines and the like. Most important, learners would have help learning and practicing the *discipline's distinctive habits and skills for analyzing and communicating about data,* for each discipline's distinctive norms and values are embedded in these. In history, Sam Wineburg and his colleagues have begun to describe these habits in terms of certain *heuristics* – sourcing, contextualizing, corroboration, etc. – that they believe historians practice, and that teachers and students should learn as well.

These critical disciplinary habits and skills are rarely taught explicitly even to graduate students in history. It is not surprising, then, that educators lack a vocabulary for recognizing them and talking about them. For this reason, helping teachers and students getting a better handle on these 'intermediate stages' of historical cognition – making them more concrete and more visible – is an important task for teacher education, for media design, and for research. From this vantage point, two promising opportunities are apparent that I will briefly point to: current teacher education opportunities in history, and new media designs that 'make thinking visible' around primary data, in ways that can benefit teachers, teacher educators, and researchers.

First, opportunities for improving teacher education in history abound, not just in schools of education (which have begun to recognize the need for social studies teachers to have greater grounding in the discipline) but also in pre-service teacher development. In the past five years the U.S. Department of Education has funded over half a billion dollars of teacher professional development in U.S. history under its *Teaching American History* (TAH) grants to hundreds of school systems throughout the country. This investment represents a remarkable opportunity to increase teachers' capacity to know, and do, history in a rigorous way. Yet while many of these grants have technology components, and the Department of Education (DOE) has asked for rigorous research in tandem with this professional devel-

opment, it appears that most of the TAH professional development being offered, and most of the evaluation designs being pursued, have been formulated without reference to any of the recent theory and research into how student and teacher history knowledge, and historical thinking, develop.

Exceptions can be found across the country, however. In one project I am involved with, a collaboration between the American Social History Project at the City University of New York and schools in New York City Regions 3, 4, and 7, middle and high school teachers get packets of rich documentary sources for each of the standard topics in the U.S. history survey, and work to build more complex hypotheses about the topic that can account for the different perspectives represented. Informed by historians' articles and lectures, they then adapt their documentary packets for students, test document-based activities in the classroom, and bring evidence of student learning back to the seminar to share with colleagues. Through these activities a rich portrait of teachers and students as historical thinkers and learners is emerging and being documented, in part through the web.

If through teacher enhancement initiatives like this teachers and students are being helped to learn and adopt the disciplinary perspective of historians – and get closer to the *why* of education – it still remains challenging to marshal this kind of instruction in real classrooms, to deliver high-quality assignments that are full of substance not just process, and to give all students the support they need to succeed. This is where well-designed technology 'scaffolds' may come in. A host of creative media designs are emerging that make primary data available, and surround it with disciplinary tools of inquiry in ways clearly meant to support students. Historians and history educators at George Mason University and Stanford have created "Historical Thinking Matters" (http://historicalthinkingmatters.org), a website that offers video overviews and interactive modules for students that make plain the layered and evidence-rich process of historical investigation. Faculty and students at Virginia Tech have created the "Digital History Reader" (http://ww.dhr.history.vt.edu/us/intro/index), which aligns genuine historical questions with carefully chosen documents and thoughtful student assignments ideal for a high school history classroom. My own NEH-supported site "Picturing Modern America" (http://www.edc.org/CCT/PMA) supports students in closely reading historical images from the turn of the 20th century. These are just a handful of the many disciplinary tools that are emerging, with more and richer ones on the way. It remains to be seen if these kinds of designs actually make classroom teaching easier for the average teacher – it is likely that most would find even these careful supports too great a stretch from what they typically have students do – but for those interested in fostering disciplinary skills, they are invaluable guideposts.

Other recent digital tools provide much-needed literacy supports that students require as they read, think, and work online with texts of different kinds. Programs like Thinking Reader and Strategy Tutor, created by CAST, an organization that works to expand learning opportunities for individuals with disabilities tools, help address the actual literacy gaps that we see when we look past myths about 'digital kids.' Finally, there are also new kinds of portals emerging for teachers that make it easier to create and share digital 'assets' they find valuable (primary source documents, rich video clips, etc.) as well as rank and rate the teaching strategies they used with them – all so that other teachers can benefit. (See "Teachers Domain" http://www.teachersdomain.org and "Primary Source Learning" http://primarysourcelearning.org, which help teachers use the vast online archives of a public TV network, and the Library of Congress, respectively.) Sites like these may eventually reduce the classroom-management burden teachers face in engaging students around rich 'primary data' in social studies.

I arrive then, at the end of my narrative, in a hopeful frame of mind about technology and the social studies, though not in a state of blind faith. In my story, progressive technology 'tinkerers' can be redeemed by a larger awareness of the complex educational landscape in which they seek to intervene, by making common cause with teachers and teacher educators who share their view of the ends of education – scientific, humanistic, self-critical and grounded in the disciplines – and finally, by a sense of irony. For in a culture that exploits and celebrates technologies as engines of social and economic change, for educators to insist that technologies are themselves social and historical, capable of being shaped and molded to suit the world we *want* to live in, indeed puts us in an ironic position.

In his book "The End of Education," Postman offers us not a grand narrative to replace the ones we've lost, but several smaller, more hopeful, and contingent narratives that he sees as alternatives to what he calls the 'failed gods' that rule our current cultural moment – the gods of economic utility, consumerism, technology, and multiculturalism. Postman gives his new narratives wonderful names, names that summon ends that we might, he hopes, be able to agree on enough that we could tell rich and complex stories to our children about them. Three of his smaller, hopeful, contingent narratives have particular relevance for us as social science educators concerned with technology. The first narrative is Spaceship Earth, and focuses on "inventing ways to engage students in the care of their own schools, neighborhoods and towns" (p. 100). The second is the narrative of the Fallen Angel, which focuses on human fallibility, teaches students to be "error detectors," helps cure us of the "itch for absolute knowledge," and encourages in us an acceptance of our imperfect knowledge. The third is the narrative of the American Experiment, through which students learn about

the successes and failures of America and are exposed to "the study of arguments about freedom of expression, about a melting-pot culture, about the meaning of education for an entire population, and about the effects of technology(…)" (p. 142). If, in a new 21st century of technology-enhanced global environmental change, geo-political gamesmanship, and cultural dislocation, these three stories do not speak to us with urgency, inspiring us toward passionate teaching and learning in the social studies, we may be more adrift than Postman thought.

References

Bransford, J., Brown, A., & Cocking, R. (Eds.). (2000). *How People Learn: Brain, Mind, Experience, and School*. Washington, DC: National Academy Press.

Donovan, S., & Bransford, J. (Eds.). (2004). *How Students Learn: History, Mathematics and Science in the Classroom. Washington*, DC: National Academy Press.

Postman, N. (1996). *The End of Education: Redefining the Value of School*. New York: Knopf.

Postman, N. (2000). Will our children only inherit the wind? *Theory & Research in Social Education, 28*(4), 580-586.

Wineburg, S. (2000). Making historical sense. In P. N. Stearns, P. Seixas, & S. Wineburg (Eds.), *Knowing teaching & learning history: National and international perspectives* (pp. 306–326). New York: New York University Press.

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