A Different Kind of Legacy Problem

Our personal legacies, particularly for those of us who didn't grow up as "digital kids," may slow our creation of and immersion in online communities

By **Vicki Suter**

As computing and information resources specialists, we probably consider ourselves natural experts on the potential uses of technology in higher education. However, I propose that, for a whole new class of uses — particularly for teaching and learning — our past experiences may inhibit our imagination.

As Sherry Turkle explains, most of us, especially those over 30, were introduced to computers as analytical machines that helped us do complex calculations according to well-defined rules. We applied computational power to breaking complicated systems down into simpler parts to better explain and understand them. In this way, the computer acted as an extension of our intellect.[1] Our view of computers also reflects the world view and scientific perspective in place at the time most of us received our academic training — we were taught to see the world in linear, logical, reductive, and hierarchical terms.

Digital Kids

People under 30 see computers as providing an environment for simulation, navigation, and interaction, according to Turkle. They are increasingly comfortable substituting representations of reality for the real. They experience computers as "evocative objects" that can serve as extensions of physical presence. Turkle describes this as a shift from a culture of calculation to a culture of simulation: "In the culture of simulation, if it works for you, it has all the reality it needs."[2] She explains that, starting 20 years ago, children have been exposed to computers and computer toys that combine mind activities (singing, spelling, game playing), an interactive style, and an interface that simulates the physical world. As a consequence, a new generation has grown up thinking of computers as psychological objects.

Some of us relate easily to Turkle's contention that "Just as musical instruments can be extensions of the mind's construction of sound, computers can be extensions of the mind's construction of thought." An example she gives is that many of us no longer compose documents by writing in long-hand on a piece of paper; we prefer to sit at a computer to do our writing. She argues that the reason for this is not just a question of efficiency and speed (typing versus writing), but of our preference for an enlarged "thinking space" that affords immediate access to many layers of material through display windows on our computer screen.[3]

For those who experience their computers as psychological objects — "as an object on the border between self and not-self"[4] — instead of as an analytic machine, the computer becomes, as Turkle says, an "intimate machine." That's a way of thinking about computers that might be hard for some of us to imagine.

Researchers have identified other differences in those who grew up digital. Accustomed to a highly mediated world (television, telephone, video games, personal computers with multiple windows open), today's kids are always multiprocessing. This implies a short attention span (estimated to be between 30 seconds and 5 minutes). As John Seely Brown notes, far from being the handicap you or I might consider it, this short attention span "parallels that of top managers, who operate in a world of fast context-switching."[5]

After 10 to 15 years of video games and other "life on the screen," they also have image and screen literacy and a penchant for action — they prefer learning through exploration, direct action, and discovery of actions' consequences (the manual is irrelevant). As Brown observes, "They want to turn the thing on, get in there, muck around, and see what works. Today's kids get on the Web and link, lurk, and watch how other people are doing things, then try it themselves."[6] Their preferred style for problem solving is bricolage: sorting through resources at hand (objects, tools, documents, data) and rearranging them until they work.

Finally, through all their communication media, they are accustomed to being simultaneously in touch with many of their friends. They weave constant consultation about problems,

social chatter, and storytelling through all their other activities.

A New Context for Learning

What does this have to do with technology, teaching, and learning? If we combine an understanding of the digital kid with what we now know about learning and cognition, we have an entirely new context for constructing learning environments using technology.

Again, as computing and information resources specialists, we don't necessarily have much knowledge of how ideas about learning have shifted with a century of research on learning and teaching. We might not spend much time thinking about learning research and theory. We also operate in higher education, where, ironically, the disconnect between research about learning theory and actual teaching practices is long standing.

One excellent resource that summarizes the research with an eye to transforming new understanding of learning and cognition into practice is the 2000 study by the Commission on Social and Behavioral Science and Education, *How People Learn: Brain, Mind, Experience and School*. The book argues that to transform teaching practices to reflect learning principles, four interdependent and interrelated learning environments must be created and supported by the practice: learner centered, knowledge centered, community centered, and assessment centered.[7,8]

For the purposes of this discussion, consider just one element from *How People Learn* and see how it plays out in the new context. The principle: Learning is a social activity, and knowledge is constructed socially. Brown argues that with the bias toward action that today's digital kids have,

> Once we fold action into the other dimensions, we necessarily shift our focus toward learning in situ with and from each other. Learning becomes situated in action; it becomes as much social as cognitive, it is concrete rather than abstract, and it becomes inter-

twined with judgment and exploration. As such, the Web becomes not only an informational and social resource but a learning medium where understandings are socially constructed and shared.[9]

Technologies that might contribute to creating a learning environment include the Web, e-mail, listservs, bulletin boards, threaded chat, tele-mentoring, and collaborative software. However, as Helen Knibb notes,

> It has been easy to focus on the technology as tool, the enabler that provides the communication medium to support asynchronous and synchronous discussion. What's more challenging is the step beyond this and the mechanics of interactivity. If the individual learner is to be successful, the technology must be evaluated in the context of socialization.[10]

When we delve into socialization processes, the idea of community immediately emerges. And this takes us to the idea of communities of practice because, as Brown says, learning to be a physicist is not the same as learning about physics — it requires "immersion in a community of practice, enculturation in its ways of seeing, interpreting, and acting."[11]

Communities of Practice

Here's where our experience and culture might get in the way of our imaginations. I remember trying to tell a colleague at a major university about this new entity, "the virtual community." We worked our way through varied definitions: no, its not exactly a listserv, although listserv functionality might serve the community; no, it isn't just a Web-based discussion board or chat room, either. She said, "Well, I don't participate much in Internet newsgroups, and if that's what a virtual community is, I'm not interested." I asked, "What if you have a technical question or problem you can't solve, and your colleagues on campus can't solve it either. What do you do?" She explained that she would post the question to a list that she belongs to,

"but I don't hang around to chat and socialize; besides, I already get too much mail anyway."

We revisited the question of community later, only this time with a younger colleague involved in the discussion, a Web designer. He said, "Oh yeah, I belong to an online community, altsense.net." We asked, "Well, what is it?" He explained,

> I've got a window open to it all the time — it has a Web-based discussion board and a fully searchable database, libraries of things like source code, and a collaborative project space, and some interesting experiments in net interaction, like birthday cards, and a place to share photograph albums, and polls. It would be even better if it had something like instant messaging where you can see who's online all the time and chat. I belong to two other online communities; one of them has blogs[12] I can really get involved in.

He saw altsense.net not just as a communication platform or as an information resource (although he used it for both); he saw it as a place for a set of social experiences, an environment of people who shared an interest (in the case of altnet, networked culture) to explore and discover together. For him, the content and context were integrated. As a digital kid he didn't even think about how extraordinary these uses were — he took them for granted. If we understand his relationship to this environment, it doesn't take much of a leap to see how such an environment could also be used as a learning environment in support of teaching practices based on what we know about learning and cognition.

Too Big a Change?

On the other hand, maybe this is too much of a leap. I started to get a glimmer of what he was talking about — I could almost imagine myself in such a community. My colleague, on the other hand, could not imagine herself in this setting. Based on the learning principles just discussed, how could

she understand such a construct without active, nonthreatening, online community experiences (with repeated practice and reinforcement) that were social, authentic, and situated in her context? She won't get these experiences by surfing through a couple of Web sites. No one can really see and understand a community from the outside — a person experiences community by becoming part of one.

Many of us are often evangelists for the use of technology. However, to perceive what uses are possible and relevant, as Turkle says, "It is up to individuals to make out what the legacy of personality, history, and culture causes them to see."[13] How can we expand our vision beyond our own personal legacies? The usual prescriptions — read books and journals and attend conferences — still hold. For example, this issue of *EDUCAUSE Quarterly* contains a book review on designing for community.[14]

I suggest that we also watch the consumer electronics market closely to get insights into emerging technologies and how people choose to use them. An annual conference is held every year in Las Vegas.[15] We can also try to stay "young" in our perspectives by making sure we expose ourselves to experiences in new environments. For example, several members of the EDUCAUSE staff took an online class on communities, where we had an opportunity to experience the social and technical aspects of online community. This has greatly informed our work on the EDUCAUSE Virtual Communities Initiative.[16]

Finally, we can make sure that our planning, design, and prototyping teams include young people and students. That shouldn't be hard to do — unlike many other industries, ours naturally provides a large pool from which to choose. We often forget this or decide that the management problems are too difficult. However, these arrangements are mutually beneficial to students and professionals — they can learn from us, we can learn from them, and maybe even create our own online community. *e*

Endnotes

1. S. Turkle, *Life on the Screen* (New York: Simon & Shuster, 1995), 1–26.
2. Ibid., 22–24.
3. Ibid., 29–30.
4. Ibid., 30.
5. J. S. Brown, "Growing Up Digital: How the Web Changes Work, Education, and the Ways People Learn," *Change* (March/April 2000), 13.
6. Ibid., 14.
7. J. D. Bransford, A. L. Brown, and J. W. Pellegrino, eds., *How People Learn: Brain, Mind, Experience, and School*, Expanded Edition (Washington, D.C.: National Academy Press, 2000).
8. Note that NLII 2001 Fellow Helen Knibb has written a white paper intended to provide a conceptual and practical framework to think about and understand the application of research to practice. See H. Knibb, "Learner-Centered by Practice: Using What We Know About Learning and Cognition in Designing for the Online Environment," NLII white paper, <http://www.educause.edu/nlii/keythemes/learner centered>.
9. Brown, 14.
10. Knibb, 30
11. Brown, 15.
12. For an example of blogs, see <http://www.blogger.com>.
13. Turkle, 31.
14. V. Suter, review of Derek M. Powazek's *Design for Community* (Indianapolis: New Riders, 2002), in Recommended Reading, *EDUCAUSE Quarterly* 25 (1) (January–March, 2002).
15. International Consumer Electronics Show, <http://www.cesweb.org/>.
16. See <http://www.educause.edu/nlii/key themes/virtualcommunities>.

Vicki Suter (vsuter@educause.edu) is Director of NLII Projects for EDUCAUSE.