

Children, Teens, and the Construction of Information Spaces

By

David V. Loertscher

The school district's poll was over. It asked what students' favorite source of information was for schoolwork and for personal use from that digital world known as the Internet. The votes were tallied. To no one's surprise, Google won hands down. Over the past several years, the best of library media teachers (LMTs) have made inroads into the popularity of Google by constructing excellent digital school libraries, some using the format of web pages and others using a variety of tools such as blogs or wikis.

LMTs have made a valiant attempt to attract young users on the basis that *quality* information online is a paramount issue. Yet, our students continue to trust Google even in the face of the overwhelming amount of documents retrieved for them by this ubiquitous search engine.

Let us take the student's point of view, which is probably very similar to our own. When we all sit down at the computer to do our work, we expect the organizations and services behind that screen will provide us with what we want and need instantaneously. Few care where the information comes from as long as it is what we need when we need it.

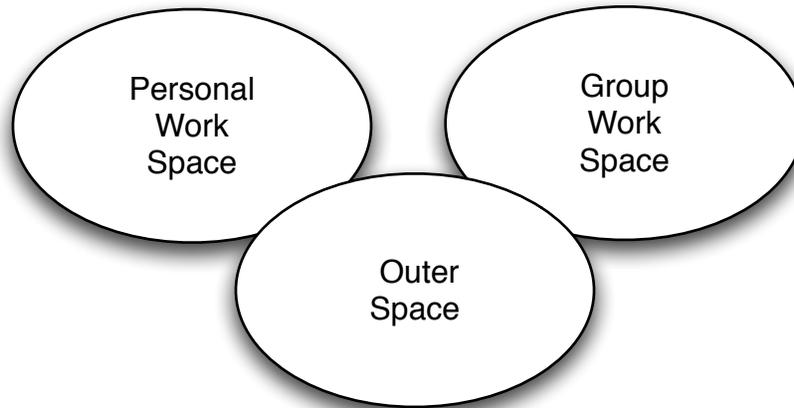
Suppose we turn the tables and accept the notion that the student should be in command of their own information spaces on the computing devices they have access to. And that our role as LMTs is to help students build the kind of information space that will benefit their needs rather than say to them, "You need to use the information space as we have designed it for you." Such a switch in perspective challenges us to have a whole new view of the digital world.

The following model assumes that each individual student, teacher, and even ourselves as information professionals would construct a "home page" or access interface to the world of information: a secure place, a safe place, a work space, a personal digital assistant that could be accessed 24/7/365 from any location in the world.

Information Work Spaces

In Support of a World-Class Education: Opportunities and Responsibilities

My Information Work Spaces



My Personal Work Space:

- Similar to My Yahoo or iGoogle
- Print, digital, and multimedia
- Only those Information sources and tools I want and need

My Group Work Space:

- Allows collaborative work with groups or individuals anywhere in the world
- Allows us to be creative, share, produce and work to solve problems

My Outer Space:

- Allows entrance into the full range of information, print and data on the Internet!

I will:

- Construct my work spaces with mentors
- Master any useful technology
- Learn to be productive in my work spaces
- Learn how to learn and think in my work spaces
- Create, share, and publish my work
- Learn to manage myself in my work spaces

Characteristics of the Information Work Spaces:

- Under my control and safe
- Accessible on any device or from any location
- Utilizes both commercial and open source software
- Elastic in nature; that is, my spaces grow or decrease in size and complexity as my needs and interests grow and develop

The model demonstrates the creation of three parts of “my” information space: personal work space, group work space, and outer space (the full world of the Internet). Each of these spaces has a function to allow users access, but designing such an engine requires that users learn to manage that space and that they learn to manage themselves responsibly in that space.

Why should students be encouraged to construct their own information space? The fact is, they already do, but probably not very well. It is reasonably safe to assume that most have a cluttered mess on their opening screen, and they seem to muck through with a few bookmarks and by searching for the source, folder, or document around the screen. Yes, operating systems encourage organization of the desktop, but it would be interesting to hold a discussion with kids and teens to see what the status of their home pages are. Perhaps we should look at our own desktops, as information professionals, for a clue about how we organize our own information spaces. Perhaps the chorus of voices would unanimously state: “Well, it’s quite messy, but I seem to manage.” I would say this is not good enough.

Let’s start with the basics as we consider the reasons, the whys, the wherefores, and the implementation of this turn-around idea.

Why should kids and teens build their own information spaces?

There are plenty of good reasons why kids and teens should have lots of control under adult guidance:

- The world of the Internet is getting larger, more complex, and overwhelmed with information. Kids, teens, and adults increasingly need skills to manage that space because it can overwhelm any of us at any time. Since it is not going away, we either manage it or are overwhelmed by it.
- It is the nature of digital space as it is currently constructed to vie for our attention, the major currency of this generation. Psychologically, all of us need to manage rather than be managed.
- To survive in a flat world, kids and teens need to realize the advantages of learning and knowing the major tools of productivity, both as individuals and collaboratively in groups. We usually think of productivity in terms of output of goods and services, but the same concept applies in digital space. Those who are well connected are proficient and productive. For example, a teacher’s assignment, along with help from the LMT, come instantly to our desktop, is available 24/7, and connects us to the tools we need in order to accomplish that assignment. Those not in the loop, suffer.
- In constructivist theory, if kids and teens build their own space rather than have others build it for them, they will acquire management skills, both of the space itself, and more importantly, management of themselves within that space. We teach kids how to manage themselves as they cross the street even though streets are a very dangerous place. The same care needs to be taken in the digital world. Adults need to assist kids in developing management skills because the adults cannot be there every moment.

- In the world of differentiation, varying abilities, differing learning styles, and individual skill levels (novice to expert), kids can construct basic spaces to manage their work and then construct more complex systems as they develop the management skills to handle those spaces and themselves. For example, from the digital school library students can pull onto their own pages a subset of tools and information sources rather than have everything – much of it irrelevant to them at any given time.

What are the essential elements of a personally-constructed information space?

The model illustrates three elements of information spaces: the personal space, the group or collaborative space, and outer space (the whole world of the Internet). Each requires some elaboration.

Personal Information Space: Here we construct the tools, the information sources, our school or work assignments, our calendars to keep us on track, and the personal safeguards needed to function well. Some parts of this space are pull technology—information or tools I purposefully “pull” onto my page from elsewhere and can use when I need them. Other features are “push” technology—information and tools that automatically appear on a desktop for attention. Assignments pushed to me from my teachers and LMTs are a good example of something I want to be informed about as soon as they are available. My personal space is my productivity space where I do much of my work, have the information conveniently at hand, and have constructed safeguards so I am not bothered by outside influences I don’t care to encounter.

Group or Collaborative Information Space: The advent of Web 2.0 technologies allows for collaborative communication, collaborative construction, and collaborative presentation spaces. As a student, I may be in a number of groups from different classes—some of these are classes at my school, outside the school, outside the school district, or anywhere in the world. Examples of collaborative spaces develop, it seems, almost every day. The most well known are Wikipedia, YouTube and MySpace. All are admired and feared at the same time. We think of Skype to talk with small groups around the world for free. There are Nings that are closed communities where everyone has their own personal blog that can be read and commented on by all those in the Ning. Nings also have a discussion forum to work on planning or discussing issues. We think of wikis as places to do collaborative information gathering, writing, updating projects, joint planning, and a host of other group work. We think of Google Docs and Spreadsheets as perfect places for group writing and planning. The nice thing is that many of these tools are free. Whole courses can be taught using the open-source program Moodle. Others such as Elluminate or Blackboard require a considerable investment. In such group spaces, we go in and out of the groups we belong to as projects are completed or our personal interests and skills evolve.

Outer Space: The third world on our desktop is the ability to interact with and pull from the totality of the Internet, whether open or invisible. This is where the

most crucial management skills are needed to protect ourselves, our privacy, and our work while taking advantage of the global information system. Can we, for example, subscribe to a major newsfeed without opening ourselves to a barrage of advertising? Can I connect to groups, information sources, libraries, organizations, activist groups, and global movements, as well as begin to build my own entrepreneurial forays into the global marketplace? Outer space is full of opportunity as well as dangers. How do I manage both?

What do you mean by students managing their information space and managing themselves in that space?

Computer operating systems have become much better at assisting users to manage their systems and the information on them. But in the Web 2.0 world, many new tools have emerged to handle large sets of information. For example, del.icio.us helps us manage favorite websites and RSS feeds make us aware of changes in our favorite websites. iGoogle turns the computer welcome screen into one's own centralized organizational system of the three different information spaces. Imagine both an information system building workshop and a tune-up shop where young people constantly learn new techniques for updating their own skills and pushing out their own frontiers as they juggle the millions of entities trying to get their attention, take their money, or even abuse them or steal their identity. Since there is not a foolproof safety net and there will not likely ever be one, students need to learn safety rules for managing their own behavior in digital space. We already have some concerns in this area, but users need to discover some important guidelines:

- Decide whom to trust in digital space.
- Have a work ethic and know how to be productive.
- Work ethically in collaborative spaces, contributing rather than destroying.
- Learn to discern harmful elements and know how to control them so they don't control the user.
- Discern when I am caught in addictive online behavior and know how to break it.

At present, schools often try to control bad behavior or lock down systems that threaten kids and teens. Wouldn't it be better to equip students with self-defense strategies? A famous person once said: "Teach them correct principles and let them govern themselves." Such an optimistic goal may not work for some kids, but it will work for many, many others, and it will become a lifelong skill.

What about content on these self-designed systems?

In the marketplace today, textbook companies are trying to capture the market of both printed and digital textbooks. Other companies have content-rich topical information systems they sell for a fee. Libraries subscribe to online databases for student research. In a student-run system, we need to have elastic content systems that kids flow in and out of as their needs change. If I am exploring a topic, for example, I may want to enter a content system at an apprentice level, and I would then want to push my expertise toward the expert level. In other systems, I might need specialized knowledge for one project that requires me to use a database for only a half hour. Content providers try to maximize

both usefulness and profits. If they saw more flexible user-controlled systems emerging, they would design their systems to be useful across different platforms.

Would we abandon the construction of the digital school library or the public library information system? No. We would continue to build these systems but instead think of them in terms of a grocery store where our students can come and select apples, oranges or cereal to drag to their own home pages to nourish their information use. We will soon find them pawing through our wares and picking what they want and need, but not picking the spoiled apple or the yucky broccoli. Yes, that broccoli software might be “good for them,” but they have probably already found something that works better and faster for their individual needs.

One of the best uses of Web 2.0 tools is to have students construct their own content as they learn together, do projects, read, write, and solve problems. Best of all, their content and writing can be shared with the world through blogs, YouTube, wikis, and Flickr albums. There seems to be no end to the self-publishing opportunities using technologies that engage and motivate. Learning has never been so exciting.

Who would teach kids and teens to create and constantly improve their information spaces?

Certainly the LMT, the district technology coordinator, and the building-level technology personnel need to collaborate to plan and develop systems and the needed channels to get students started and to provide the needed support. Instead of locking out all Web 2.0 applications, technology leaders need to find ways to include them. Much can be outsourced safely. For example, in a Ning, each member of a collaborative community must be invited, and no one from the outside can see any content. Thus, students and teachers can blog, add comments, show videos, discuss issues, and other things without interference. Once the channel is opened up, the software and storage of information on the Ning is free, maintained off-site, and available from any connected computer throughout the world. The owner of the Ning receives all comments posted to the Ning and can review and monitor what everyone is doing if mischievous behavior begins to develop.

At the beginning of the school year, a construction session can be sponsored by the technology staff, LMT, and interested teachers. Certified students can assist individuals and their friends to build, monitor, extend, and manage their information spaces. It is a community opportunity to share, help, and encourage. It already happens in the social networking world of kids and teens. We just need to extend the influence in another direction.

So What?

For years we have built computer information systems on the idea that “if you build it, they will come.” Well, they came, but instead of staying, they did a work around because of their needs in social networking. Instead, we propose that: “If THEY build it, they will LEARN.” Learn what? Children and teens will not only learn how to construct a learning space, but in doing so, will surround themselves with tools that help them learn. The

fishing pole of the technology world, as opposed to giving them a fish, requires students to begin to take command of their information spaces and their own learning within that space. It is a gift of a lifetime.

Some might panic with this proposal against the centralized, one-fits-all system, assuming that outsourced systems won't work for kids. The fact is they already do work. We are already at odds with the current generation who sees school as irrelevant and boring. Technology is one place to build a bridge that crosses the chasm¹ between students' seeming boredom and the exciting world of learning.

¹ Li, Quing, (2007). Student and teacher views about technology: A tale of two cities? *Journal of Research on Technology in Education*, 39 (4), pp. 377-397.