children, teens, and the construction of information spaces

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 TEACHER-LIBRARIANS 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.

Teacher-librarians 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 number 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 teacher-librarians is to help students build the kind of information space that will fill their needs rather than say to them, "You need to use the information space as we have

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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 student, teacher, and even the information professional 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.

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 on 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 hows, toward implementation of this turn-around idea.

WHY SHOULD KIDS AND TEENS BUILD THEIR OWN INFORMATION SPACES?

There are many 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 teacher-librarian comes 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 important, 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.

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 teacher-librarian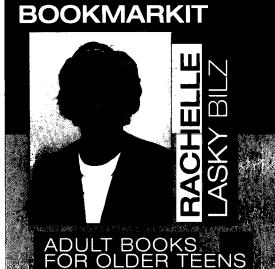s are a good example of something I want to be informed about as soon as they are available. My personal space is my productivity space where I do much of my work, have the information conveniently at hand, and have constructed safeguards so I am not bothered by outside influences I don't care to encounter.

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 use 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 those in the Ning. Nings also have a discussion forum that is used to work on planning or discussing issues. We think wikis are places to do collaborative information gathering, writing, updating, 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 Internet, which allows us to interact with and pull from other sites, 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

> YA FICTION

JOURNEYS IN FANTASY WORLDS

Epic. Conor Kostick. Viking, 2007. $17.99. 978-0-670-06179-2. Grades 8 and up. Erik's culture centers on a fantasy role-playing game where disputes are settled and money is earned. But when Erik's father is unfairly banished, the 14-year-old and his friends start to challenge the game and its leaders. A timely, fascinating, and thought-provoking piece of science fiction.

The golden dream of Carlo Chuchio. Lloyd Alexander. Henry Holt, 2007. $18.95. 978-0-8050-8333-0. Grades 5–8. In this romp through a fictional Middle East setting, Carlo grows in self-knowledge and self-confidence as he faces dangers on a long trip. In typical, delightful Lloyd Alexander fashion, Carlo gathers a varied group of companions who become family to one another.

Into the woods. Lyn Gardner and Mini Grey. David Fickling Books, 2007. $16.99. 978-0-385-75115-5. Grades 5–8. With their mother dead and their father gone, Storm and two sisters become the target of the evil Dr. DeWilde and his pack of wolves. The three girls, all with distinct personalities, are thrust into a series of adventures, many with fairy-tale aspects.

Shield of stars (The shield, sword, and crown. Book 1). Hilari Bell. Simon & Schuster, 2007. $16.99. 978-1-4169-0594-3. Grades 6–9. Although once a pickpocket, 14-year-old Weasel is loyal to the judge who has taken the boy under his wing. When the judge is imprisoned for trying to overthrow a corrupt government, Weasel schemes to save him, a plan that puts him in cahoots with a mysterious girl with goals of her own.

global movements, as well as begin to make 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 web sites and RSS feeds make us aware of changes in our favorite web sites. iGoogle turns the computer welcome screen into one's own centralized organizational system of the three different information spaces. Imagine both a workshop for building an information system and a tune-up shop where young people constantly learn new techniques for updating their own skills as well as pushing out their own frontiers as they juggle the millions of entities trying to get their attention, take their money, steal their identity, or even abuse them. Since there is no 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 follow 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 you are 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 teacher-librarian, the district technology coordinator, and the building-

level technology personnel need to collaborate to plan and develop systems, the needed channels to get students started, and also 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, teacher-librarian, and interested teachers. Certified students can assist individuals and their friends to build, monitor, extend, and manage their information spaces. It is a commu-nity 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 worked around it 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 chasm (Li, 2007) between students' seeming boredom and the exciting world of learning.

This article is an excerpt from the book *In Command: Kids and Teens Build and Manage Their Own Information Spaces.* Salt Lake City, UT: Hi Willow Research and Publishing, 2007. Available from http://lmcsource.com

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

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