

ack in the fall of 1995, the ERIC Review devoted its entire issue to the K-12 Computing Network, covering such subjects as "Teaching Teachers to Use Telecomputing Tools," "Classrooms Online: How One Teacher Got Started," and "Selected Resource Organizations." While the content of these articles is now sufficiently outdated to be part of ancient computing history, the principles are the same. The final page of the issue was devoted to "Putting It All Together: An Action Plan." Their "tips" spoke about such things as organized chaos and the need to jump in and try. The "next steps" advised practitioners to help others find low-cost solutions, join a listserv and discussion group, help integrate computing into teaching and learning, evaluate the effects of computing on student motivation and achievement, and invite students, parents, businesspeople, and other community members to share their experience with the schools. All still good advice!

What's changed, of course, is how we implement these dicta and what's available to accomplish them. The one thing I'd add to the above ideas would be to find a way to keep up. What I'll try to do in this article is give some current options for media specialists who want to adopt elearning tools, and I'll make some suggestions about how to keep up ... because the pointers that will help you to-day will be old hat tomorrow and obsolete the day after.

STUDENTS COMING OUT OF THE K-12 SYSTEM

First, I'd like to tell you what I observe in the students I teach, namely first year university students. I teach a two-credit, required class called Fundamentals of Information Literacy, so I teach students everything from academic integrity through research and evaluation of information to information issues. I also see the immediate end result of the K–12 system in my state, and I suspect that it doesn't differ all that much from the state of affairs across the nation.

There's no question that I see digital natives, i.e., those born in the Age of Computer (I'm the Age of Aquarius, but we won't go there). What I also see is that the assumption that digital natives are also digitally savvy isn't necessarily true. Some are, but many are not. The factors that make the difference are both in and out of the educational system—home environment, economic status, external opportunities, and internal desire. To feel less overwhelmed, I focus on the factors I can influence and only a small portion of them.

Another student characteristic relates to reading and writing—do they or don't they? It's easy to forget that this has always been the case; what I note now is that the distinction is more acute than it used to be. Multitasking is another issue. I don't actually believe in it. I think it's multiflitting from one thing to another in rapid succession. I read periodically about short attention spans, but I don't see short attention spans if they're playing online games where they concentrate for hours. The problem is getting and retaining their attention where we want it. So how do we do that?

ADVANTAGES AND DISADVANTAGES FOR MEDIA SPECIALISTS

Media specialists and librarians experience advantages and disadvantages. Most of us are outside the classroom on a daily basis, dealing with students when the regular teacher invites us in or brings them to the library or media room or assigns them to come on their own. The disadvantages include the amount of time we can spend with them, the fact that we don't always have the opportunity to control how the assignment is managed, and the ultimate influence we have over their reading and writing practice. The advantages include the opportunity to promote what we do as a special treat, something different from the everyday, and the chance to hook them with new and exciting opportunities.

FUNDAMENTAL TECHNOLOGY ISSUES

The first issue is what technology is available to the students. If you live in a relatively well-to-do district, you will likely have more technology available for your students than poorer districts. The irony is that these students may have more technology at home than they can access at school, so a brief inventory of your students' home computing capabilities is a good idea. It's also a good idea in poorer districts, just to know what you're up against. Once you have the data, you can focus on getting technology capability to those students who do not have as much computing capability at home.

For students with laptops, encouraging them to bring them into school is a way to increase your own computing capability on-site. This may or may not be possible in light of liability issues and parental restrictions, but it's worth a try.

For those districts that are poorer, it's time to find partners. These could be local libraries, if they're not in the same fiscal state as the schools or heavily bound by legal restrictions such as the Children's Internet Protection Act (CIPA). These could be local businesses, organizations such as the Rotary Club, or any group willing to help. Perhaps government or private grants are possible, or perhaps you can get hand-me-downs from richer districts or from businesses that are upgrading. Some sort of hunting expedition is needed. In an interview with Miriam Gilbert of Rosen Books,2 we discussed this gap between what vendors can supply and what school districts can afford or actually make available. The frustration is definitely in creating wonderful products that can't be delivered either because of costs or, if delivered, because the computing capability isn't in place to view them.

THE WEB 2.0 ENVIRONMENT

Once the computing capability issue is addressed, there's much you can do that's free. Web 2.0 is a wonderfully developing environment, with Web 3.0 on the horizon. Getting the students active is a great way to get their attention. Instead of endless clicking on online games, have them create blogs or wikis. If you can offer to help a particular teacher or class with a project that lends itself to blog activity, you can reach students through their teachers. In my first class, I ask how many students have created a blog. The answer is generally about 50%, so I already have disparity among my students' experience and capabilities. I choose to have them create a blog on Blogger because, while it's not as sophisticated as Word-Press.com, it's easy to use and gets students going. From that point on, my students post all their assignments on their blogs, creating a portfolio by the end of the course.

My weekly assignments require students to write short pieces. I've found that while they moan and groan about writing a document in MS Word, they happily click away on blogs, writing without considering it a chore. I think it's because it's new and different, which tells me that in a year or so, I'll have to find a newer method to make it fresh and exciting. Another neat aspect is that students can comment on each others' blogs, which I also require, creating a peer-review process. There's nothing like reviewing classmates' work to require them to know the subject matter themselves. It also gets them used to the idea that criticism, whether positive or negative, doesn't have to be personal. Peer review is a major part of their post-K–12 experience, and it's helpful if they start when they're young.

For another collaboration technique, I create a class wiki. In this case, I use PBwiki.com, again because it's free (up to a specific data storage limit) and because it's relatively easy to use. I set up the wiki and invite each student to join. Once the students have joined, they can edit the wiki, so they can create a document together. It's not only peer review, but co-editing to create a collaborative document. This is something else they'll experience in their post-K-12 environments, whether in college or on the job. How many times have you written reports or documents of some sort that others have reviewed and changed? This is a way to do it together. I generally divide my class into groups of 4-6 for this activity and create as many wikis as I need in order to set up the groups. It's interesting to have them compare the finished products to see how topics can be taken in different directions and researched in different ways.

If you're helping the students to work on a research assignment, see if the teacher will collaborate with you on these ideas. Students can save their research findings on their blogs, write about them, review them, and create them together. You and the teacher can partner on the project in ways that weren't available before these tools were invented.

WEB 2.0 TOOLS

There are some wonderful tools that can provide structure for the research they conduct. One example is del.icio.us. Instead of bookmarking websites, you can put them on del.icio.us, enabling access from any computer connected to the internet. Not only that, they can "tag" the URLs, i.e., provide descriptors for each site they post, and even group the tags. This helps to teach organizational skills for information sites they gather (back to the organized chaos concept). Now, they can organize the chaos for themselves. To learn more about this tool yourself, see http://personal.strath.ac.uk/d.d.muir/Delicious1_2.pdf, which goes into great detail.

Another useful tool is LibraryThing (www.library thing.com). On this site, visitors can list all the books they are reading. This is great for summer reading lists. They can also see who is reading the same books and what else those people are reading that they too might enjoy. They can also communicate with these people. Reading used to be a solitary matter—or at most a matter that was unique to a family, if the members were readers. Now, there's a widespread reading family that makes the process much more social. They also organize the

A SAMPLER OF WEBSITES

Examples of School Library/Media Centers

Paideia School, Atlanta: www.paideiaschool.org/about_us/library.aspx
Joyce Kilmer Elementary School Media Center, Mahwah, N.J.:
www2.mahwah.k12.nj.us/applications/web_cms/index.php?siteid=2542
Manchester High School Library Media Center: http://chesterfield.k12
.va.us/Schools/Manchester HS/Library

Miscellaneous Sites for Younger Students in Particular

International Children's Digital Library: www.icdlbooks.org

Follett Library Resources: www.flr.follett.com

HarperCollins Publishers games and contests: www.harpercollins childrens.com/HarperChildrens/Kids/GamesAndContests

Scholastic Publishing games: www.scholastic.com/Clifford

Random House's Seussville: www.seussville.com

Evaluation Tools

QUICK: The Quality Information Checklist: www.quick.org.uk (evaluation tool for students)

Kathy Schrock's Guide for Educators: http://school.discovery.com/ schrockguide/eval.html (evaluation tool for educators)

Free Ebook Sites for Older Students

Bartleby.com: www.bartleby.com (scroll down to "download free e-books from the Amazon.com-enabled bookstore")

Google Scholar: www.scholar.google.com Google Book Search: www.books.google.com

Project Gutenberg: www.gutenberg.org/wiki

University of Virginia Library's Electronic Text Center: etext.lib. virginia.edu/ebooks

Links to Living Authors' Websites for Younger to Older Students

Note: This is a great way to help students feel closer to authors, and some of the authors welcome student emails.

Jan Brett: www.janbrett.com

Ben Mikaelsen: www.benmikaelsen.com

Stephen Hawking: www.hawking.org.uk

Alan Lightman: http://web.mit.edu/humanistic/www/faculty /lightman.html

Links to Posthumous Authors' Websites

Note: Learn more about them and connect to some of their work online.

Jane Austen: www.janeausten.co.uk and www.pemberley.com

The Literature Network: www.online-literature.com (be careful of the ads—they "flash")

Poetry Archive: www.poetry-archive.com (also has ads)

Walt Whitman: www.whitmanarchive.org (one of the most authoritative sites on the web)

Audio and Video

Annenberg Media Learner.org: www.learner.org

Films for the Humanities and Sciences: http://ffh.films.com (rental options available as well as purchase)

Web 2.0 Tools

PBwiki: www.pbwiki.com

Blogger: www.blogger.com

LibraryThing: www.librarything.com

del.icio.us: http://del.icio.us

Tutorials for You

School Library Learning 2.0: www.schoollibrarylearning2.blogspot.com
This gives you "23 things" to do to learn about Web 2.0. It's a great tutorial.

Super Crazy Librarian Guy: http://supercrazylibrarianguy.wordpress.com
A set of individual tutorials on tools such as blogging, RSS feeds, Mixx (news,
photos, and media sharing), Digg ("shares content from anywhere on the web"),
Meebo (for instant messaging), Flickr (photos), and many other tools I can't cover
in a 2,500 word article. As these are individual tutorials (see the list on the
right-hand side), you can target what you want.

Making Your Voice Heard

Check the Web for your state's **School Library Organization**, e.g., **California**: www.schoolibrary.org Most have a legislative page and they're "up" on the issues in your state.

chaos, once again. In this case, it's more like cataloging. They start to pay attention to what edition they're reading, who published it, and so on.

Recently, a woman came to me for help in starting a little library in her daughter's very poor grade school. She is getting books through donations, and as an alternative to a library system the school can't afford, she is using LibraryThing. She is also using some older students (grades 7–8) to enter the books. In the end, they may print out their "catalog," rather than directing students to look online because most of these students have no computer access unless they go to the local public library. The library will probably end up with about a thousand books. The students will have some way of looking them up, and the majority of the cost will simply be labor. There will be a small fee for entering more than 200 books, but at the moment that fee is \$25 for "a lifetime" for an individual sub-

scription. Those students who have helped with the project will also be great promoters, having now developed a vested interest in the process and the project.

RESEARCH

As part of my class, I teach research skills through search engines and through databases my campus or campus system has purchased. While the latter requires the significant outlay of money, the former does not.

Google is the current front-runner in all things "search engine," but it isn't just Google any more. It's Google Maps, Google Scholar, Google Book Search, and Google everything else. The opportunity to see the planets, read a digitized book, and find out what's available (even if it's tantalizingly out of reach sometimes) is one of the many gifts of the web. My students are aware of Google, but most of them are unaware of these other

Googles, offering a wonderful opportunity for a media specialist to introduce them to these other worlds. The availability of digitized out-of-copyright books via Google Book Search is growing. The ability to search Open WorldCat through Google Scholar, even if access is unavailable, enables students to learn about a much larger world. If persistent, they can also learn about interlibrary loan and, potentially, the importance of planning ahead. Helping them to persist from search to access is a wonderful gift in attitude development. Of course, you have to steer them carefully so that it's possible for them to get to the endpoint (no dissertations, for example). This is particularly important for high school students as they prepare for college. I continually emphasize the importance of curiosity and persistence for success in research.

If you have access to purchased databases, you can also help students to understand the difference between searching on a search engine and searching a commercially produced database, and you can discuss why each is good for different things. Some of the toughest concepts for students to learn are these:

- The internet and the web aren't the same thing.
- A search engine isn't a database.
- A platform isn't a database, either.

Anything you can do to help students understand these basic concepts will help them now and down the road.

REFERENCE

On our campus, we offer chat reference (using the QuestionPoint subscription service, formerly known as 24/7), email reference, instant messaging (when the reference desk is open), in-person help, and telephone service. My assumption is that we will also offer new types of services when they are invented. All these connections are listed on a chart on our website (http://library.csueast bay.edu). If you are only one person, you will have to decide what you can offer because you can't cope with the volume, but these are some options for you to consider, if you haven't done so already. It's great to offer students a connection from home at least a couple of hours a week.

COLLECTION DEVELOPMENT

We still buy books on our campus, but fewer than we used to. Not only is this a budget issue (and it is a budget issue), it's an issue of how information is now available. As the collection person for English (literature, linguistics, creative writing, etc.), I buy to support the curriculum, but I definitely assess what's available via Google Book Search and other web sources as I make my decisions. As a general rule, our library has also made a decision against purchasing any more DVDs. VHS is going the way of the dodo bird, and we expect DVD to follow. Streaming video is the up-and-coming thing. For us, as we teach online more and more, streaming video has become essential, even as we realize that some of our students don't have the technological capability to deal with it (high-speed internet being an absolute must). For most

of you, this may be far removed from your current world, but sooner or later, whether you're ready or not, you will need to deal with it. If your classes go online (more likely at the high school level) or if you deal with more and more home schooling, delivering text and visuals over the internet will become an issue.

SOME IDEAS FOR YOU

I am at the end of my 2,500 words, so I'd like to offer a few ideas for you. Many of you work alone—use some of these tools for yourself as well as for your students. You also need to explore tools to communicate with your own peers. I'm sure you email back and forth, but there are newer ways to exchange ideas. If your district subscribes to a product such as Elluminate (www.elluminate.com), for example, you can all get online at the same time, chatting and viewing the same material synchronously, exchanging ideas, and engaging in conversation. If your district doesn't have such a product and can't afford it, there are sometimes special deals. For example, Elluminate currently offers its *Live!* Lite Edition free to K—12 institutions for a full year (www.elluminate.com/press/offers_k12.jsp).

A longer-term option is to use Elluminate's free vRoom, which you can configure for up to three people. This enables the same exchange features, just among fewer people at a time. These types of tools are wonderful for helping you end the isolation some of you must feel in your respective schools or districts. Even if you are fortunate enough to have collaborators and peers where you work, you can still benefit from these broader exchanges. Sign up for webinars, even if you can't join at the time but can only view them after the event. How do you find out about them? Often through listservs, but companies such as Elluminate also list their back presentations for re-viewing (just click on "Events"). You'll be surprised how community helps you to jump in, be more productive, stimulate ideas, and aid those you so deeply desire to help.

To end, I'd like to point you to the sidebar on page 15. It contains a mix of all sorts of sites you can explore, with a view to helping you find something new that will help you in your journey. Oh, and by the way, have fun!

Endnotes

- 1. "K-12 Computer Networking," (Fall 1995). ERIC Review, 4(1).
- Gilbert, Miriam. Interview by Aline Soules, Sept. 27, 2007. This interview was conducted for a forthcoming chapter on ebooks.

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