

# Multimedia™ INTERNET@SCHOOLS

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The Media and Technology Specialists' Guide to Electronic Tools and Resources for K-12

## A LOOK AT...

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# BUILDING THE PERFECT COMPUTER LAB



**AT** the end of many of the days since the current elementary computer lab program was implemented in our district, I've sat in the lab or at the library circulation desk wondering what I've gotten myself into.

I love books, computers, and students, so what could be better than running a media center in two elementary schools?

Don't get me wrong, I'm grateful for the computer labs. Each has 26 computers, usually enough for every student in each class. The computers are all the same model, are generally kept in good repair, and are networked. Each lab has a color and a gray-scale laser printer and an aging projector and is located next to the school library as part of the media center.

That said, my concerns center on the problems we've had, the hours spent troubleshooting computers, the student sessions lost due to malfunctions, and so on. Some days, it can seem that more time is spent trying to troubleshoot computer and/or software

problems than actually working with the students in the lab.

Computer labs are only as good as their wiring and equipment. Like many schools, our equipment is middle of the pack in terms of quality. Fortunately, though, it doesn't cause problems too often.

The computers we began with were refurbished units purchased by the district for less than \$300 each, very inexpensive 9 years ago. Those were replaced with computers donated by a local company, a definite step up in terms of speed and hard drive space. As might be expected, these units had been used a great deal and now experience problems from time to time, especially since most of our software was outdated when we bought it—as cheaply as possible nearly 9 years ago.

In our elementary schools, the computer labs and libraries have been combined into a media center. All of the students in my schools come to the media center for 1 hour and 10 minutes a week, as part of their teachers' released (or planning) time. Most of the students don't use computers in school at any other time.

During this media center time, we discuss and check out books in the library and do computer lab work. Our computer projects tend to be short one- or two-session projects; we use more skill-building software than some elementary computer labs.

This article will focus on the computer lab equipment and software that I would like to use in the situation I'm in, from a decidedly elementary to middle school point of view.

Many computer labs in public education are very different in conception and design, and, as a result, the content of this piece won't suit all purposes. Hopefully,

however, it will contain constructive suggestions that will help any media specialist.

The comments about various products mentioned here aren't intended to be reviews. There are many more products than those discussed on these pages that would be great for my computer lab—there just isn't enough room to mention all of them.

## IN THE BEGINNING: EQUIPMENT

### Computers

Of course, a lab must have computers. For our purposes, any of the lower-end, less expensive computers would be excellent, especially since we won't be doing a lot of video editing or anything else in the foreseeable future that requires more space and speed. Both Apple and Dell offer some excellent choices.

#### Apple eMac

The Apple eMac has a really nice compact design with a 17-inch monitor, 1.4 GHz GV processor, 80 GB hard drive, combo drive, and more. The small footprint (the amount of space used by the machine) would be excellent for our cramped labs. Retail pricing for the unit begins at \$799.

Apple has an outstanding customer satisfaction record. The OS X operating system includes as standard many features useful in a lab; many of these must be purchased as extras for a Windows system.

I learned to use computers with the early Macintoshes and now use Windows machines because my district has adopted them exclusively. I still believe Macs are easier to learn to use and to operate.

*Apple Computer, Inc., <http://www.apple.com/>.*

#### Dell Dimension 3000 Celeron

Dell also has an excellent customer satisfaction rating. At the time this was written, the company was offering a nicely featured computer at a great price. The Dell Dimension 3000 Celeron offers a 17-inch monitor, 2.40 GHz Celeron processor, 80 GB hard drive, speakers, and a 48x CD burner. Features such as the 48x CD burner and 80 GB hard drive can be exchanged for more needed items or a reduced cost. As I write this, the unit is retailing for \$399 after a \$100 rebate.

*Dell, Inc., <http://www.dell.com/>.*

### Projectors

#### Epson PowerLite 737c Multimedia Projector

This 2000 ANSI lumens projector is nice and bright, weighs less than 4 pounds, and costs \$1,899. It is easy to set up and use and will work in wireless settings. The small weight makes it easy to move the unit from room to room in the building.

Projectors are a mixed blessing in a lab; students often seem to have more problems with attention than usual. Nevertheless, with its portability, the PowerLite 737c would be useful for demonstrating projects and processes.

*Epson America, Inc., <http://www.Epson.com/>.*

#### ELMO P30 XGA Visual Presenter

For a little more than \$2,000, this is a wonderful tool that may offer more features and flexibility than need-

ed in an elementary school lab. I would like to use the P30 XGA Visual Presenter to project books on the wall by connecting it to a projector like the PowerLite 737c mentioned above.

The unit's excellent camera can capture some moving images, as well as the pages of books. The visual presenter can also be used to capture images for editing on a computer through the USB connection. With the SD Memory Card Slot, presentations can be created and saved on a computer, then presented without the computer. The visual presenter is extremely portable and could easily be moved from the lab to the library or any other room in the building.

*ELMO Co. Ltd., <http://www.elmoussa.com/presentation/>.*

### Printers

#### HP LaserJet 1022N Printer

I've used a variety of HP printers, from personal deskjets to laser printers, in the lab with excellent results. Currently, we have both a black-and-white and a color laser printer.

I'm not sure the use of the color printer justifies the expense of purchasing and maintaining it. Color projects often add complexities and expenses that rarely seem justified by the results. Staff members also tends to misuse the color printer. In general, it seems to get used more to print photos and certificates than anything else.

My ideal lab would have one of the new HP LaserJet 1022N black-and-white printers, which has an excellent price of \$283. The printer may be a little small if every computer in a building uses it, but it is a good size for an elementary school lab. The unit prints 18 pages per minute, is recommended for a monthly volume of up to 8,000 pages, and has an 8-second warm-up and print feature.

*Hewlett-Packard Development Company, L.P., <http://welcome.hp.com/country/us/en/welcome.html>.*

## IN THE MIDDLE OF IT ALL: SOFTWARE

### Lab Security

Most forms of security are handled at the network level, but my district seems to have missed this one. A great deal of our time is spent correcting problems created by users who change the browser and word



ELMO P30 XGA Visual Presenter

processor toolbars, modify the menu bar at the bottom of the screen, dump folders in the trash, and so on.

I think these changes are more often made by accident or to show off knowledge to other students, rather than for malicious reasons. Whatever the cause, the next student on the computer often doesn't know how to proceed until the situation is corrected—which costs a lot of lab time. A program like the following would be a big help.

### FoolProof Security

FoolProof Security protects both Windows and Macintosh desktops and operating systems by preventing users from making unwanted system changes. The program ensures that computers remain set up and configured correctly, which helps teachers use more of the instructional time for instruction. The software prevents the dragging and renaming of files and folders, restricts changes to the desktop, and locks the control panels or Chooser feature, along with many other functions. Contact RiverDeep for pricing information.

*RiverDeep Interactive Learning, Ltd., <http://www.riverdeep.com/>.*

### Basic Tools and Activities

Learning to use the computer itself is the most basic process we teach in our computer lab. Next among the basics are keyboarding and word processing skills.

### Keyboarding Skills

#### Type to Learn Jr.

Type to Learn Jr. for grades K–2 helps students learn to do some preliminary keyboarding with age-appropriate instruction and three activities designed to help them use the computer with greater ease. The program begins with keyboard awareness and moves to typing carefully selected words into short sentences. Students first work with locating the letters of the alphabet and numbers on the keyboard as they divide the keyboard into left-hand or right-hand keys. The cost of a single copy is \$29.95; volume discounts are available.

*Sunburst Technology, Inc., <http://www.sunburst.com/>.*

#### Type to Learn 3

Type to Learn 3 for grades 3–12 provides 25 lessons with a time travel theme that help students learn keyboarding skills. Built on a typing curriculum of sequential skills-building instruction, this program focuses on mastery. The software tracks individual

progress; students can pick up where they stopped at the previous session. The game component keeps student interest strong enough to keep learners tackling the drill material.

*Sunburst Technology, Inc., <http://www.sunburst.com/>.*

### Word Processing Skills

We use **Microsoft Word** in our labs. I also really like the new **Learning Essentials for Microsoft Office** (to be reviewed in the next issue of **MULTIMEDIA & INTERNET@SCHOOLS**). In addition, the following program from Tom Snyder looks like an excellent program.

### Scholastic Keys

Scholastic Keys provides elementary students with an intuitive interface for Microsoft Word, Excel, and PowerPoint. The program offers a variety of helpful templates, drawing tools, hundreds of colorful graphics, sound effects, a text-to-speech reader, and movies.

The software also includes some creativity tools not found in the Microsoft Office products, among them MaxPaint, a drawing and painting tool, and MaxRecorder, an audio recording tool. MaxWrite creates Word-compatible documents and includes a variety of tools for working with Word; MaxShow works with PowerPoint, and MaxCount works with Excel. Scholastic Keys is priced at \$59. Volume discounts are available.

*Tom Snyder Productions/Scholastic, <http://www.tomsnyder.com/>.*

### Beyond Word Processing

#### Kidspiration/Inspiration

Students need to move beyond keyboarding and working with writing tools to actually doing some writing. Inspiration is a great planning tool for 6th–12th graders; Kidspiration is a simpler version for younger students. Both are available in Mac/Win hybrid editions and retail for around \$70. Volume licensing is available.

#### Kidspiration 2.1

With Kidspiration visual learning software for grades K–5, students can combine pictures, text, and spoken words to represent ideas and show relationships. Using the Picture View feature, students can develop groups, webs, or concept maps to work on a writing project and then move their work to the Writing View to expand the ideas into writing. The SuperGrouper feature helps students learn to sort, group, classify, and compare by



Scholastic Keys



Kidspiration/Inspiration

dragging words and symbols into shapes that represent a topic or concept. The program includes a library of 1,200 symbols to represent ideas in diagrams and a Symbol Maker tool to create more symbols.

*Inspiration Software, Inc., <http://www.inspiration.com/>.*

### Inspiration 7.6

Inspiration visual learning software provides a great tool for pre-writing activities. Students can build graphic organizers, including webs and concept maps, and can outline their thoughts to organize ideas for reports. The program's integrated diagram and outline view is very useful. Designed for 6th graders to adults, the software is definitely for the older students, since it tends to be a bit complicated until the basics are mastered. In addition to the Mac/Win version, Palm OS and Pocket PC versions are now available.

*Inspiration Software, Inc., <http://www.inspiration.com/>.*

### Multimedia Projects

Although many projects can be done using Microsoft Word, Excel, and other products, multimedia projects are currently being emphasized more and more, especially at the upper elementary and middle school levels. **PowerPoint** is often used for these projects, but it can seem fairly rigidly structured.

### HyperStudio 4.5

The HyperStudio multimedia authoring tool for Macintosh or Windows provides unique features, including brainstorming tools, visual organizers, project planners, desktop publishing features, multimedia presentation capabilities, and authoring tools for CD-ROM and Web site development. The program includes many project ideas, templates, and lesson plans, along with tools to create rubrics, portfolio pieces, and other assessment components.

This is a somewhat complicated program that takes some time to learn, but it does come with excellent support materials. Additional materials are available online, including sample projects, lesson plans, resources, and a copyright-free collection of clip art and sound files. The home version is priced at \$69.95; the school version is \$159.95. Volume discounts are available.

*Sunburst Technology, Inc., <http://www.sunburst.com/> or <http://www.HyperStudio.com/>.*



*HyperStudio 4.5*

### Curricular Software

Computer labs can support the curriculum in a variety of ways—from being part of a highly structured curricular program to providing time for projects supporting one aspect of the curriculum to supporting the curriculum informally while providing practice in one area or another (as with highly motivational game-oriented programs).

Each week, I see 23 groups of Young Fives through 5th grade students, sometimes five different grade levels in a day. Curricular programs like the ones below help me make an efficient, valuable use of lab time without always taking the instructional time or planning time necessary for more complicated projects.

### The JumpStart Series

This series features a number of grade-specific programs for toddlers through 5th graders. The software covers basic skills like math and reading, as well as subjects such as typing, Spanish, and more.

*JumpStart Advanced 2nd Grade*, for example, is a three-disc program that helps children build and practice essential grade 2 skills. Disc one covers reading, math, art, and music fundamentals. Disc two, *Field Trip Adventure*, explores the cultures and music of nine countries and teaches youngsters foreign words and phrases. Disc three, *Mystery Club Vol. 1*, lets students investigate crime scenes, solve mysteries, and interview witnesses to earn a detective badge. In general, the programs are Mac/PC hybrid and cost approximately \$30 per title.

*Knowledge Adventure, Inc., <http://www.knowledgeadventure.com/> or <http://www.jumpstart.com/>.*

### Mighty Math Carnival Countdown

Originally developed by Edmark, *Mighty Math Carnival Countdown* for ages 5 to 8 presents more than a problem/drill approach with thousands of math puzzles covering dozens of topics. These include the concepts “greater than” and “less than,” geometry patterns, Venn diagrams, an addition and subtraction game, and more. The carnival format provides motivating sounds and visuals. The program is basically a visual manipulative to give students a lot of practice. This Mac/Win hybrid is priced at \$24.95.

*RiverDeep Interactive Learning, Ltd., <http://www.riverdeep.com/>.*



*The JumpStart Series*

### **Problem-Solving Software**

Problem-solving software is excellent for use in a lab for many reasons. In addition to fostering problem-solving abilities, these titles frequently exercise math, reading, thinking, and other skills, while their game-like appearance makes them highly motivational. Generally the software discussed below, and other similar titles, are great for some very enthusiastic, educational lab sessions.

### **The Oregon Trail, 5th Edition**

The Oregon Trail is one of my favorites. We've used an older edition for a long time, and the newest version would be nice. Developed for children ages 9 and older, this program is a simulation game that helps students understand the challenges of traveling westward by wagon train in the early 19th century.



*The Oregon Trail, 5th Edition*

The students make most of their own decisions, and those decisions affect the outcome of their journey. At the start, they equip their wagons by buying supplies with a limited amount of money, then move west and deal with various problems along the way. Advice is available; the program features plenty of reading, history, map reading, geography, and a variety of other skill-building opportunities. The program is offered in a Mac/Win edition for \$24.99, single copy price.

*RiverDeep Interactive Learning, Ltd., <http://www.riverdeep.com/>.*

### **Scooby-Doo! Case File #1: The Glowing Bug Man**

This problem-solving series, currently including at least four titles, relies on Scooby-Doo's popularity to overcome some sometimes spotty activities. Developed for 5- to 10- year-olds, the program contains eight

sleuthing activities and six different themed activity areas at three challenge levels. The software features puzzles, printables, and music. There are a number of these types of puzzle or problem-solving programs available, and, while not approaching content area instruction systematically, these programs do encourage the development and growth of thinking and computer literacy skills. The program retails at \$24.99.

*RiverDeep Interactive Learning, Ltd., <http://www.riverdeep.com/>.*

### **I SPY School Days**

Based on the very popular books and television program, the I SPY software series includes seven or more titles, several of which are available for download for \$19.95 from the Scholastic I SPY Web site. I SPY Junior for 3- to 5-year-olds is available on CD-ROM.

If you're not familiar with these immensely popular books, they are basically a series of large, visual puzzle or photo collages that students search to find hidden objects. The I SPY School Days software program develops skills such as visual discrimination, spelling, reading, creative writing, math concepts, and more. It contains nine unique play areas filled with more than 1,600 object-and-word searches in hundreds of picture riddles, puzzles, and games.

*Scholastic, <http://www.scholastic.com/ispay/>.*

### **WHAT'S NEXT**

Our computer labs currently use the Internet to a degree, but, in the near future, we will need to increase our efforts in the area of Web (or Internet) literacy as we help to build our students' knowledge of the Web and the many ways to use it. At that point, we will need to invest in some of the subscription Web services and incorporate Web authoring into the technology curriculum.

As I finish this article, I'm back where I started writing, looking at one of the school's computer labs and the huge array of plugs and cords dripping off the back of the computer tables. The sight has me thinking ... a wireless lab would be wonderful!

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