



# MCCCE NEWS

MONTANA COUNCIL FOR COMPUTERS  
AND  
TECHNOLOGY IN EDUCATION

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## Free and open source software roundup

By Vince Long

Keeping our computer systems current has been a challenge ever since the first Apple ][s arrived in the classroom. There are the hardware upgrades, driven by demands of new software, and there are the software upgrades driven the desire for new applications and features. It tends to be a vicious cycle and schools, unlike the corporate world, generally do not have a plan for regular replacement of computer systems and, if they do, funding can be tenuous.

For the first 20 years of the PCs existence, it seemed that the demands placed on the hardware by both its operating system and its applications manifested themselves as "wait time" that slowed productivity and, sometimes, made the user wonder whether going digital was even worth the effort.

However, the performance of our hardware has grown exponentially in the past 5 years to the point that, for most applications, the system waits on the user more often than the other way around. The demand to upgrade the hardware to increase the usability of the system is not the priority it once was.

On the software side of our systems, we still find it necessary to upgrade to either keep current with our operating system or to install applications having a host of new uses. Even though one may run the same old hardware, there can be an ongoing cost to buy software, if buying is the only option. However, there are an increasing number of applications that are available at no cost, many of which rival commercial programs from the major software development companies. This software falls under the category called "freeware" and in that designation there are two types: open source and everything else.

In the "everything else" group, the software is created by a programmer, a team of programmers, or even a company of programmers, and that software is placed in circulation to be used by anyone at no cost. The owner can still retain

the copyright on the product and there may be some restrictions on how it is used and by whom. There are literally tens of thousands of freeware applications in circulation for most operating systems and every type of use imaginable. Quality is highly variable and your mileage will vary. It's always a good idea to read a few reviews about the product before installing it. A good place to start looking is at CNET's site: <http://www.download.com/>

The other type of free software is the "open source" type. What differentiates this software from the previous type is that, not only can

you freely install and use it, but you have access to the original source code which means you can also reprogram it to adapt it to your specific needs. Now, before you say that as a non-programmer you cannot see the advantage of



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Over the past few months I have seen technology getting quite a bit of exposure: the National Education Technology Plan was unveiled, there have been several articles in national journals concerning technology, the MCCE/OPI TechTalks have been taking place, MEA is using technology for presenter registrations and an extraordinary amount of spam in my Inbox has been technology related.

The national ed tech plan may be of interest to many of you. You can view the plan at <http://nationaledtechplan.org/> and even download a PowerPoint presentation to show all of your friends and peers. One of the most interesting pieces to me was the seven action steps they suggest:

1. Strengthen Leadership
2. Consider Innovative Budgeting
3. Improve Teacher Training
4. Support E-Learning and Virtual Schools
5. Encourage Broadband Access
6. Move Toward Digital Content
7. Integrate Data Systems

I believe many of us have been working on these very issues for years, so it was reaffirming to see the government thinks they are important also. We won't get into the funding aspect though...

A big thanks go out to Terry Lankutis and Michael Hall for organizing the monthly Tech Talks. This has been a great way to vent, collaborate and share with others dealing with technology from across the state. I have had very positive feedback after each session and we encourage all of you to participate in the next video conferences on March 22th and April 26th.

We are really excited to see the MEA presenter applications go on-line – no more downloading forms, writer's cramp, stuffing envelopes or stamps. To fill out a form, go to <http://www.mea-mft.org/> and click on Educators Conference under Other info at the bottom of the page. If you haven't registered, you will have to follow the link provided and give them some information then you will be able to complete the form for presenting. Applications will be due in May so it is not too early to start thinking of ideas. As always, I encourage you to post questions and comments on the listserv [mcce@billings.k12.mt.us](mailto:mcce@billings.k12.mt.us) and use the resource of over 300 of the top technology users in the state to help you.

Kevin Croff  
MCCE President

## Inexpensive headphones are a hit

by Vince Long

The multimedia demands placed on our computers also requires additional hardware. One of those items are speakers, which at home are fine, but in a computer lab, the last thing I need is for 25 computers to be blasting their unique content and creating a cacophony that will drive me to the aspirin bottle. The remedy is not an analgesic but headphones for each computer. In a large lab this can lead to a considerable expense but I have found an excellent source for headsets that get the job for a reasonable price, that is, if under \$3.00 sounds reasonable for a headset that includes the microphone and a volume control.

The source is the ever-reliable [www.newegg.com](http://www.newegg.com). On their headset page they have, as of this writing, headsets with attached micro-



phones, starting at \$2.00 each. I bought the Yommo MP-017P for \$2.75 and was pleasantly surprised to find the sound quality of both the headphones and the microphone to be quite good. I've used them for listening to music as well as doing online voice chatting with Skype (see the free software article in this issue) and they performed as well as sets that have cost over \$20.00.

One advantage of this low price is that if damaged by normal classroom use they are inexpensive enough to just replace rather than repair. In my classroom we have used them for one semester and they all continue to work just fine.



If you are interested in headphones that fully enclose the ear, Newegg had a great price on those as well. The DCT HP-259 have a soft cushion that encircles the ear and also comes with an attached microphone. They sell for \$6.65. Like the other headset, these sound great. Testing under online gaming conditions, where voice chat and accurate reproduction of battlefield effects is a life and death issue, reveals that this product is more than up to the task.

Newegg does not have a store or an 800 number. All orders are placed via their website. I have completed dozens of transactions with them and have had nothing other than a great experience with them.

# Cell phones make great tool for cheaters

by Vince Long

As the pressure of “high stakes” testing increases in our schools, it surprises no one that some students will resort to cheating as a way to reduce stress and increase their scores. The tried and true methods of accomplishing this, crib sheets, notes on arms, and eyeballing another student’s papers are still out there but it should be of no surprise that our tech-savvy students have employed electronic gadgets to assist in this endeavor.

The device of choice today is the cell phone of which 600 million were sold worldwide in 2004. This ubiquitous electronic appliance has undergone a massive number of feature upgrades to the point where it rivals the personal digital assistant (PDA) in terms of computing power. Not only can one use a cell phone for traditional voice communication, they are used to send text messages, send and receive email, surf the World Wide Web, play built-in games, and, in the most recent advance, record, send, and receive both still and video images. These image-capable phones account for 25% of cell phone sales.

This technological convergence is unprecedented and society is already struggling to deal with it a number of venues. Who has not had a movie, play, or even a church event interrupted by a ringing cell phone? This is usually followed by the second distraction as the culprit attempts to locate the phone and turn it off, or even worse, some take the call in that venue to the ire of other attendees. Who has not seen a driver make an unsafe maneuver on the road with a cell phone held to one ear? Or, how about standing in a cashier’s line behind someone who cannot complete their transaction until they finish their phone call?

Showing how demented things are getting, many states and the federal government are looking at enacting legislation controlling how and when the cell phone is used. This is applying particularly to the picture-taking phones because still and video images can easily be taken

without detection and uploaded to the Internet. Pictures taken in locker rooms and other places where people have a reasonable expectation of privacy have already resulted in lawsuits and prosecutions. Add these local annoyances to the fact that terrorists have used cell phones to detonate explosives and it is apparent that this technology is easily abused.

As society attempts to evolve a tradition of proper cell phone etiquette, those in education find that students have a new tool in their arsenal for cheating on tests. There have been cases where pictures of tests are taken during

one class period and sent to students who have the same exam in a subsequent hour. Students use the text messaging feature to have friends look up answers for them. Class notes can be stored in the phone and recalled on its diminutive screen. It takes a keen proctor to detect these actions due to the small size of the devices, which become smaller with each generation. In a recent article technological innovations predicted that within ten years the cell phone/personal computer will be imbedded in accessories as small as jewelry.



What is the 21<sup>st</sup> century educator to do to combat this evolutionary

wave of technological development? Keeping abreast of current developments is, of course, the first line of defense. More active proctoring can help and restructuring tests to make them less conducive to this type of cheating is another option. These approaches take extra work on the part of the already busy educator who, most likely, will resent the additional chores forced by students trying to circumvent the system.

Where technology facilitates a problem it can also be employed to solve it. There are several technology-based countermeasures that help block the cheaters in their tracks. One, cell phone jammers, are currently quite effective though illegal to operate in the United States

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## Free software

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having access to the source code, there is an advantage. Perhaps you can't make changes to the program but someone else will and all of us reap that benefit. Let's look at how the open source movement works.

The Free Software Foundation (FSF), <http://www.fsf.org/>, was founded in 1985 by Richard Stallman. Originally created as the organization that would produce free software, it is now more of an overseer of the movement and the guardian of the copyrights for the software created under its GNU-GPL license. Software produced under this license must be distributed free of charge and allow users to modify and improve it. If the user makes changes, the new version must also be given away under the same license, a requirement known as "copyleft."

Related to the FSF movement is the Open Source Software movement that began in 1998. While the two share the same license, they differ philosophically as to what happens when modifications might be made. Free software, as defined by the FSF, is open source, but Open Source might not be free, that is, there may be restrictions on whether the end user can modify, redistribute, or resell the software. While some may argue the details of these differences, to most end users, it is of little impact.

Many applications have been developed as part of these movements and contributors include individual programmers and some commercial companies. One of the advantages to the end user is that most applications have an online forum to which the user can post bug reports and suggestions for future upgrades. Unlike software from commercial vendors, fixes and improvements are implemented regularly by an international team of programmers who volunteer to work on these projects.

As educators, what's in this for us? As it turns out, free software can be the way to extend the life of computer systems and to stay current in the face of dwindling technology budgets. The free software that is available covers everything from operating systems, office productivity applications, online courseware management, interactive simulations, and a variety of administrative tools. See the list below for links to resources. Let's take a look at just a few free choices that could find a place in your classroom. Most of these are available for both Windows and Macintosh systems.

### **Linux** ([www.linux.org](http://www.linux.org))

This operating system can be had for free and in a number of flavors. I have used the Mandrake version for a few years and found it as easy to install as Windows. There are more Linux users out there these days than Macintosh users and it's time schools started looking at it as a direct replacement for Windows, and Macintosh. Here's a scenario: your school just received a donation 20 used computers from a corporate entity. The computers are ready to go but arrived without an operating system. You want to set up a lab to handle basic tasks: web surfing, office applications, etc. Rather than dealing with Microsoft, just install Linux and a few of the applications listed below and you're off and running. The learning curve for Linux is about the same as learning to switch from Windows to the Mac or vice versa. Not sure about how to get and install Linux? Try a Linux users group such as <http://www.montanalinux.org/>

### **Firefox** ([www.mozilla.org](http://www.mozilla.org))

If you run any flavor of Windows and haven't dumped Internet Explorer for the Firefox web browser you just don't know what you are missing. Not only is this browser less prone to attack by spyware and other malware, it is slick, fast, and supports tabbed surfing which lets you view multiple web sites within one browser window. Since it's source code is open, programmers are writing extensions for it that would take its competitor years to produce. For example, for a quick download I added a tool called Nuke Anything which does exactly what its name implies. By right-clicking on ANYTHING in a web page and selecting "remove this object" from the pop up menu, the object is gone from the page whether it is a floating ad, a banner, a picture, or even a block of text. The browser also supports an aggressive popup blocker and a host of other, easy to configure features. It's limitations are few, such as if you are used to using your web browser to perform an FTP session (transferring files to a server) you'll have to install a plug-in or use a separate FTP client. In my classroom, I replaced Internet Explorer with Firefox at the beginning of the school year and my browser-induced problems, especially from spyware, have dropped by 90%.

### **Thunderbird**

([www.mozilla.org/products/thunderbird/](http://www.mozilla.org/products/thunderbird/))

OK, admit it. You are still using Outlook Express to check your email. And why not? It came preinstalled on the computer. It does everything I could want from an email

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## Free software

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client, or does it? The folks responsible for the aforementioned Firefox have come up with a free email client that is not only easy to install, but will migrate all of your mail boxes, folders, accounts, and other data from Outlook Express. Going beyond what Outlook Express could even hope to do, Thunderbird has a built in spam filter that learns what it should block the more you use it and a host of other privacy and security features, such as preventing you from absentmindedly opening risky file attachments.

### **OpenOffice.Org** ([www.openoffice.org](http://www.openoffice.org))

Whether you run Windows, Linux, or a Macintosh you need to check out OpenOffice.Org. This office suite is a complete replacement for Microsoft Office and, while it does not support as many features as its commercial competitor, who uses everything that comes with MS Office anyway? OpenOffice.Org comes with a word processor (to replace Word), presentation (to replace PowerPoint) tool, a spreadsheet (to replace Excel), a drawing program (vector-based to replace Paint), and web page builder. You can open any of your MS Office files in this application and it will also save in MS Office format. If you are used to MS Office you will find the learning curve is nil as the interface in each of the applications mimics its MS Office equivalent. Be sure you have the current version of Java before you install OpenOffice which is available at [www.java.com](http://www.java.com), also freeware.

### **Audacity** ([audacity.sourceforge.net](http://audacity.sourceforge.net))

When it comes to recording and editing sound files there are a number of commercial candidates but you need to look no further than Audacity. It can open virtually any audio format, including MP3, and has a full range of editing tools, effects, and filters. Finished files can be exported in a format ready to burn to audio CD.

### **VirtualDub** ([www.virtualdub.org](http://www.virtualdub.org))

When it comes to editing video, Adobe Premiere is one awesome tool but if your needs are simple and you want some tools that go beyond the XP-bundled Movie Maker, give VirtualDub a try. It not only helps you capture video to your hard drive but, once there, it can perform a variety of editing tasks. Aside from standard editing you can reprocess your video by extracting or inserting audio, changing resolution, frame rates, and video type.

### **The Gimp** ([www.gimp.org](http://www.gimp.org))

Again, we have a nice replacement for an Adobe product,

this time Adobe's Photoshop. The recent release, Gimp2.0, is a huge improvement over its predecessor. In terms of stability it has a ways to go yet, but this feature rich application is certainly ready for the classroom. My students adapted to it readily and avoid its stability problems with frequent saves. It has more features and filters than can be covered here but in my classroom the most popular are the ones found under "Script-fu" which include GIF animators and some great special effects filters. It supports layering and saves in virtually every known image type.

### **Skype** ([www.skype.com](http://www.skype.com))

This program was mentioned in a previous edition of this newsletter and continues to be a very useful application. Skype is a free "voice over Internet protocol" (VOIP) program. Available for all popular operating systems, it allows voice communication between computer users. It is easy to install and configure, supports conferences between a number of users, and includes text chatting. It requires a microphone and speakers or a headset. A broadband connection is required as well. I tested it with a friend who has two-way satellite broadband and the results were poor due to the latency induced by sending packets on a 23,000 mile round trip. However, chatting with a friend in England is like having him right in the room. The sound quality is in the range of FM radio, a huge improvement over POTS (plain old telephone service.)

## Free Software for the Technology Lab

In addition to the applications listed in the main article, my students and I use a variety of other programs on an almost daily basis specific to some aspect of our technology studies. While not all are open source, and some are free only for educational use, they get the job done for the right price.

### **Sambar Server** ([www.sambar.com](http://www.sambar.com))

I've been using Sambar as Senior High's web server for about 6 years and am generally happy with it. While Apache Server is also free, and open source, is more popular and robust, it is also a bit more complicated to set up and I was looking for a server that was secure while still being easy for students to set up and Sambar for both of these requirements. Additionally, there is a Sambar mailing list with which I can communicate directly with the author

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## Free software

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of the software and am happy to say the I've received great feedback and even seen a suggestion of mine incorporated into a subsequent release of the program. The server also functions as an FTP server, provides detailed logs, full CGI (common gateway interface), and support for PHP/MySQL.

### WS-FTP\_LE

This is an FTP client that was released years ago as freeware for educational use but has been discontinued by its provider and replaced with a commercial version. If all one wants is a straight FTP client that lets you transfer files between you and a server, this gets the job done. It's no longer available on the provider's site but a Google search for "ws\_ftple.exe" will turn up copies of it. If you are unable to find it you might try FileZilla, an open source alternative. It works fine but I find its interface (too many window panes) annoying.

### Bridge Builder (bridgecontest.usma.edu)

When studying structures being able to test your ideas by building and loading prototypes is a time consuming process. Add the cost of materials and it is easy to see why even structural engineers have migrated to simulation software to try out their ideas. A classic technology education activity is building and testing bridge design, allowing students to learn about structural design and shapes, however, the materials used were usually limited to Popsicle sticks, balsa wood, spaghetti, or soda straws. While putting constraints of materials on a design problem is certainly a realistic component of designing, simulation software has the advantage of using real-life materials in a fast turnaround that lets the students experiment with an endless number of designs in a short time period. The West Point Bridge Builder software provides this experience for the students at the right price since I can load the software on as many computers as I have in my classroom at no cost. The software was developed for the annual competition that the military academy hosts but works quite well as a stand-alone simulator for the classroom. The software not only sets up a problem of building a bridge across a canyon that must support an animated truck but provides a wide range of materials and alternatives. The "help" file is loaded with tips and instruction on structural design and there are host of templates the students can use to get going. The goal of the "game" is to build a bridge for the least amount of money. The current cost of the structure is continuously updated as elements are added to the project.

### MicroStation PowerDraft

([www.bentley.com/academic](http://www.bentley.com/academic))

In the world of computer-aided drafting, dominant market share is owned by AutoDesk and its AutoCAD product line. There are a few other applications out there that have their share of the market but they have an uphill battle to unseat AutoCAD. Bentley Systems, provider of MicroStation, has decided that the way to get into the schools is to provide their software for free. The product, PowerDraft, is a full-featured 2D/3D computer-aided drafting program that sells for \$1,295 but is available to schools at no cost through the company's web site. As an AutoCAD user for over 15 years I was skeptical that the product could rival the AutoCAD LT that I use in my classroom. While I have not spent enough time using it yet to provide a full evaluation, from my initial trial I can say that AutoDesk better sit up and smell the coffee. While the PowerDraft, as might be expected, supports a different interface than that of AutoCAD, it did not take long to find all the familiar tools for everything from geometric construction, editing, dimensioning, and snapping to entities. However, what really got my attention was when I found that PowerDraft would flawlessly open an AutoCAD drawing, and even more surprisingly, save in the AutoCAD format. While I'm not in the market for new drafting software, if I was, PowerDraft looks like a worthy candidate.

### Related Web Sites

#### [www.sourceforge.net](http://www.sourceforge.net)

The home of the Open Source movement. Download current projects and provide feedback.

#### <http://en.wikipedia.org/wiki/Abandonware>

Wikipedia article about abandonware, that is, software that is no longer sold or supported by its copyright holder.

#### <http://www.schoolforge.net/>

This organization works on not just free, open source software, but all materials that educators use in the classroom, including texts and curriculum. Strong Linux emphasis.

#### <http://edu.kde.org/>

Free educational software that is designed to work on the Linux KDE desktop.

## Cell phones and cheating

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because current Federal Communications Commission rules make it unlawful to interfere with a licensed transmitter. The fact that the transmitter may be doing something illegal is not sufficient grounds to allow the wholesale use of jamming technology, although jammers are readily available for sale on the Internet for prices running from \$250 to \$2000 dollars depending on its range and features. Plans for building your own jammer from readily available components are also online. Switch one of the devices on in the classroom and cell phones become inoperable within the range of the jammer, however, their picture taking capabilities will continue to function.

An alternative countermeasure, and one that is legal, is a device that only detects when a local cell phone begins transmitting. Used in a classroom, the device sounds an alarm indicating the use of a phone but not who is using it. Future models promise to pinpoint where in the room the transmission originates.

Where will this technological battle between cheaters and effective countermeasures end is anyone's guess. As schools attempt to block or detect cell phones transmissions, they will likely deal with parents who object to their use, wanting to have the ability to contact their children 24/7. Some view bringing these countermeasures into the schools akin to having metal detectors on the doors, something that puts schools in somewhat of a negative light.

Schools may have to look to the world of business and industry for models for dealing with these problems. The business world has its own set of interests that they are struggling with as the personal cell phone becomes part of many employee's apparel. These include loss of productivity due to their use, harassment of employees, and industry espionage.

The inappropriate use of the cell phone in schools goes beyond the issue of cheating. Students use them to access inappropriate web sites that are normally blocked by the school's Internet filters. Educators need to take a proactive approach to refocus or block the use of this technology in the schools. The longer they wait, the harder it will be for students to give up this device they have trouble living without.

## It's not all about Ed Tech

*by Vince Long*

Yes, as technology-using educators we like to emphasize the appropriate use of technology in our classrooms, especially when it comes to the World Wide Web. But let's face it, as teachers, we do not live by direct links to our curriculum alone but see the relationships between a wide variety of topics. It's interesting what a simple hypertext search can turn up these days. Enter a search word in Google and along with the hits you might want are sites that just beg to be accessed. Below is a list of divergent sites that have no relationship to one another other than I found at least something interesting on them. Maybe you will too.

### **Jacques Pépin: Fast Food My Way**

<http://www.kqed.org/w/jpfastfood/home.html>

This is the site for the PBS cooking show of the same name. I admit that I am a cooking junkie and the web is a great place to overindulge in food info. This site features lots of video clips, slides, and recipes for gourmet dishes that can be prepared in a minimal amount of time.

### **The Committed Sardine Blog**

<http://homepage.mac.com/iajukes/blogwavestudio/index.html>

No, this is not another food site. It's a blog, you know, one of those sites where the site owners post their comments about whatever drives them at the moment. This one has some interesting takes on education and technology.

### **Project Academic Integrity**

<http://www.journalism.wisc.edu/bateman/>

I found this site while researching the accompanying article on cell phones. It's focus is on higher education but the information is quite interesting. There are also some good articles about strategies schools can use to combat the problem of cheating.

### **Playing With Time**

<http://www.playingwithtime.org/>

This site features videos that show time either compressed or expanded. Watch the seasons speed through a landscape, a building constructed in minutes, or a slow motion of a cat drinking milk. The site also encourages visitors to become involved and submit their own projects to the online gallery.



**Coming Soon!!!**  
**NECC 2005**  
**26th Annual National Educational Computing Conference**

**June 27–30, 2005**  
**Philadelphia, Pennsylvania**

**MCCE NEWS**

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Newsletter Articles for MCCE News

Software Reviews,  
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