Laptop Laboratory Proposal

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Abstract

My proposal will be a laptop laboratory for the purpose of online blogging, digital video editing, and using various other internet sites for reflection and creative projects. This room will contain thirty Compaq laptops Intel Celeron Processors located in a mobile cart for charging. These laptops will boast 2 GB of RAM which is expandable to 4 GB, a 250 GB hard drive, 15.6 inch widescreens, and built-in 10/100Base-T Ethernet and Wireless-B+G+N capabilities. I chose laptops over desktop computers because I want the students to have the ability to move around with their work as well as have a few classes outside in nature during poetry lessons. The laboratory will have a 48 port Cisco switch which will provide internet and network access to the thirty laptops, two Brother LaserJet Color printers and instructor desktop. The lab will also have a high resolution projector and Smart Board for the teacher's use only to show videos, demonstrations, and presentations. Every computer in the room will also have access to the HP StorageWorks X1000 installed in the laboratory. The server will be used for storage space for projects and information. Students will also be required to save their work on their own HP 8GB USB 2.0 Flash Drives, which will be issued at the beginning of the year to avoid the possibility of file deletion problems. The internet connection will be provided by the district and filtered by the district's proxy server as required by the Children Information Protection Act (CIPA) of 2001.

Keywords: Laptops, wireless, Intel, storage, SMART Board, video, internet

Proposal:

An innovative, state-of-the-art 30 laptop laboratory open to the entire school, not just one classroom teacher, for the purpose of document creation, paper writing/editing, online blogging, digital video recording/editing, department and district meetings, and the use of the internet for reflection and creative projects.

Room *(see Room Layout)*

The room will be contain six, 48 x 72'' Educational Edge Kidney Activity Tables each seating up to seven students priced at $198.00/each (hertzfurniture.com). The structure of the tables will provide students an easier opportunity to work in groups and enforce the importance of collaboration amongst classmates, a vital ingredient in understanding and utilizing technology in group projects, presentations, and portfolios. These tables have an advantage over their counterpart, the round table, because all students will face the front of the room instead of just half the students if round tables were implemented. Connectivity to the network will not a problem because everything will be wireless for better functionally and for the avoidance of obsessive wire hazards.

Laptops

The room will contain thirty Compaq laptops with Intel Celeron Processors priced at 329.99/each or $9899.97 total (bestbuy.com). The laptops come with the newly released Windows 7 software, 2 GB of RAM which is expandable to 4 GB, a 250 GB hard drive, 15.6 inch widescreens, and built-in 10/100Base-T Ethernet and Wireless-B+G+N capabilities. With three USB 2.0 ports, students will have the advantage of multitasking by working on their flash

drive saved papers in Microsoft Word while uploading their videos from their Flip Cams which use USB. Also, with up to 3 hours and 45 minutes of battery life, if the laptops are charged correctly, students will be able to go through an entire period without having to charge once.

Hardware/Software

The laboratory will have utilize a 48-port Cisco switch which will provide internet and network access to the thirty laptops, two printers, and teacher's computer. On the switch, there are 48 10/100/1000 Ethernet ports with four miniGBIC slots for network expansion, if more laptops or computers are purchased for the room in the future. For extra security, this Cisco product offers advanced security with ARP Inspection, IP Source Grant, DNCP Snooping, and STP Root Guard. Tech Depot offers this switch for $1358.99, cheaper than the retail value at $1400.00. The internet connection will be provided by the district and filtered by the district's proxy server as required by the Children Information Protection Act (CIPA) of 2001.

Even though this laboratory will boast wireless connectivity, the parts to create cables will be purchased to avoid future costs if cables are needed. Tigerdirect.com offers a 500 foot roll of Cat5e cable for $49.99, 50-pack of RJ-45 connectors for $12.99, 3-in-1 crimp tool for $22.99, and a network cable tester for $29.99. To create a compare and contrast for budget reasons, 50 feet of RJ-45 network cable at chain stores such as Best Buy costs between $30 and $45/each, or 10 for $300-$450. For 500 feet of cable, connectors, crimp tool, and a cable tester to create our own cables for the entire district to use, the cost would only be $115.96.

For video, each laptop is already pre-installed with Windows Movie Maker to create movies and/videos for projects. If a written demand is received for better video-editing software,

it will be considered. But for now, WMM more than suffices the small projects that can be accomplished with the Flip Cams located in the room. Located in a cabinet near the teacher's desk, there will be ten Flip Video – Ultra HD camcorders for video recording, priced at $149.99; $1499.99 (bestbuy.com). These purchased camcorders come with a wrist strap, soft protective case, AV/TV connector cable, and a quick start guide which teachers can use to give quick summaries on how to get started. Speaking of which, training will not be necessary for teachers as these particular camcorders are very user-friendly. Each Flip Cam utilizes one touch recording with 4 GB of built-in memory (no need for tapes or additional memory cards) and a flip-out USB arm that connects directly into one of the three USB jacks located on the laptops for uploading. Also, to save on electricity costs, no charging is necessary as these camcorders are 2AA battery operated.

Considering this lab will be mainly for creative group projects and innovative presentations, two colored printers and one scanner will be available for use. The two printers in use will both be Brother Network-Ready Color Laser printers priced at $349.99/each; $699.98 total (bestbuy.com). Brother's latest wireless printer was made for today's students as it can print up to 17 pages per minute in black and up to 17 ppm in color, it can print on a variety of paper (glossy, letterhead, brochure, and rough), and it has three printing options (rough, normal, best) to save ink and to be sure that their final products look their best for submission. The lab scanner located at the teacher's desk will be a Canon – CanoScan LiDE200 Flatbed Color Scanner priced at $89.99 (bestbuy.com), perfect for photo and document scanning. Because it will be located near the teacher's desk, the scanner will be USB connected using a basic USB cable.

The teacher's desk, located in the front of the room, will be next to the interactive 64''

SMART Board. Priced at $1327.00 (*Epylon*), the board will be used to utilize Smart Board

technology for step-by-step instructions, better understanding, and also will provide a surface to

show projector-style movies and presentations. The projector, connected to the teacher's

computer and located on the ceiling in the middle of the room, will be an EPSON – XGA

Multimedia Projector ($559.99, bestbuy.com). It projects to a 30" to 300" viewable screen size,

which is perfect for our 64" SMART board, and because it is portable (only 5.1 lbs in weight), it

can be used for school assemblies that require projection style movies or Power Points. As

noticed, mostly everything in the room besides the SMART Board, printers, and teacher's

desktop can be signed out for use outside of the lab.

The computer on the teacher's desk will be a Hewlett Packard Desktop with an Intel Core

i3 processor, Windows 7 Home Premium, and a 23 inch Widescreen Flat-Panel HD screen

($249.99, bestbuy.com) which will allow teachers to multi-task by working on lesson plans,

grading documents electronically, and monitor student activities all at the same time. Priced at

$635.99 (bestbuy.com), this particular desktop was chosen for the teacher instead of a laptop

because the teacher's computer will have district software uploaded on it that should never leave

the room including grading, attendance, and lesson plan software. The key specifications will

include a 6 GB RAM, 1 TB Hard Drive, built-in 10/100/1000Base-T Ethernet LAN Network

card, 8 USB ports, 1 IEEE-1394 port, and a 15-in-1 media reader just in case students bring in

projects with file types not supported by the laptops.

All computers in the lab will run off the newly released Windows 7 operating system

already preloaded into every purchased laptop. Because these laptops are preloaded with a 60-

day trial for Microsoft Office Home and Student 2007, the purchase of this software will be necessary. The current price is $149.99/each; $4649.69 at bestbuy.com, but once the time of purchase comes, that price could become lower sale-depending.

Our district already has a firewall to block unwanted users from accessing our network *(see Network Map),* but an anti-virus is necessary to avoid any further problems down the road as our students use the internet on a daily basis. Bestbuy.com offers Norton AntiVirus for Windows 2010 for $39.99/each; $1239.69 total.

Storage

These laptops will be physically stored in a Bretford Manufacturing 30-unit Laptop cart with elect units in the back for charging priced at $1,358.02 (provantage.com). I chose laptops over desktop computers because I want the students to have the ability to move around with their work as well as provide teachers the option to teach elsewhere such as outside for nature lessons (Science) or poetry lessons (English).

As for file storage, to avoid students and faculty from saving on the individual computers and having to delete everything once they graduate, every computer on the network will also have access to the HP StorageWorks X1000 1 TB storage installed in the laboratory or school depending on the current situation or need. The offer is on the table because this particular device can serve between 25-3400 users, well more than the 31 needed. HP's Small and Medium Business Store offers the server for $524.00, with an option of paying $15.00/month over 48 months. The question that might be asked will probably be, "why do we need storage if the laptops are installed with 250 GB of memory?" Hard Drive space sometimes is the difference

between a $300 laptop and a $500 laptop. If noticed, the cheapest laptop out of the three

possibilities (*see Laptop Comparison Chart*) was chosen not only because of price, but because

of the hard disk space (250 GB compared to 500 and 320 GB, respectively). Not only this, but

students will also be required to save their work on their own HP 8GB USB 2.0 Flash Drives

priced at $17.99/each, $539.70 total, which will be issued at the beginning of the year to avoid

the possibility of file deletion problems. If lost, students will be required to pay the district

$20.00 for a new one.

Warranties

All Best Buy products offer 1 year warranties, but the purchase of protection plans on top

of these warranties are important because of any possible problems that may arise due to the

portability nature of the laptops and the amount of usage by the entire school. For a little over

$3,000.00 more, we can avoid having to call pricey technicians to come into the school after the

year warranties expire if any problems shall arise.

Laptops	Best Buy 2-Year Standard Protection Plan	79.99/each; $2399.70
Flip Cams	Best Buy 2-Year Protection Plan	44.99/each; $449.90
Scanner	Best Buy 2-Year Protection Plan	$14.99
Printers	Best Buy 2-Year Standard Protection Plan	$69.99/each; $139.98
	Total:	$3,004.57

Conclusion

If approved, this laboratory will be a great asset to not only the teachers and students of the district, but also the district itself. A lot of the computers at the high school are outdated and a lot of talk has been made about how computer labs are not easily accessible because teachers have classes in the rooms. Because of the innovative nature of the proposed room (i.e. the work tables, new laptops, and Flip Cams) our district can surely benefit not only in the present, but most importantly, for the future. The success of this room could very easily lead to future additions and improvements to our technology department and how technology can and will be implemented by our teachers in all subject areas. One of the objectives of this lab besides the innovative nature to promote creativity is the mobility and accessibility to all of the equipment for our teachers. As mentioned, everything in the room besides the SMART Board, teacher's desktop, and printers can be signed out if the room is not available. There is a high demand by our district's teachers, especially the high school, for access to technology, and this lab can and will accomplish just that. Schools in our surrounding area already have similar rooms to this one, but not quite as innovative. We have a unique opportunity to make that step and lead the way into the future of education.

Price Chart

Item	Qty.	Price/Each	Total
Activity Tables	6	$198	$1188
Compaq Laptops	30	$329.99	$9899.97
48-port Cisco Switch	1	$1358.99	$1358.99
Cable Kit	1	$115.96	$115.96
Flip Video Camcorders	10	$149.99	$1499.90
Printers	2	$349.99	$699.98
Scanner	1	$89.99	$89.99
SMART Board	1	$1327	$1327
Multimedia Projector	1	$559.99	$559.99
Teacher's Desktop (CPU & Monitor)	1	$885.98	$885.98
Microsoft Office 2007	31	$149.99	$4649.69
Norton AntiVirus for Windows	31	$39.99	$1239.69
Mobile 30-laptop charging cart	1	$1,358.02	$1,358.02
HP StorageWorks X1000	1	$524	$524
HP 8GB USB 2.0 Flash Drives	30	$17.99	$539.70
Warranties (if desired)	4	Varies	$3004.57

Total Cost of Laptop Laboratory: **$28,941.43**

References

Best Buy's web site provides many prices, specifications, and information about computers, hardware, software, etc. (http://www.bestbuy.com).

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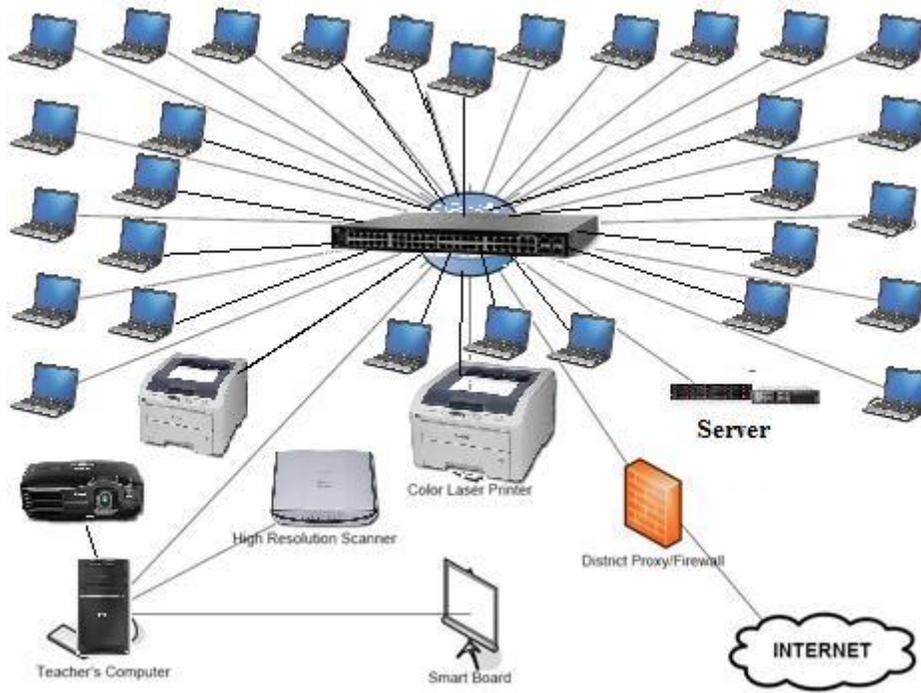
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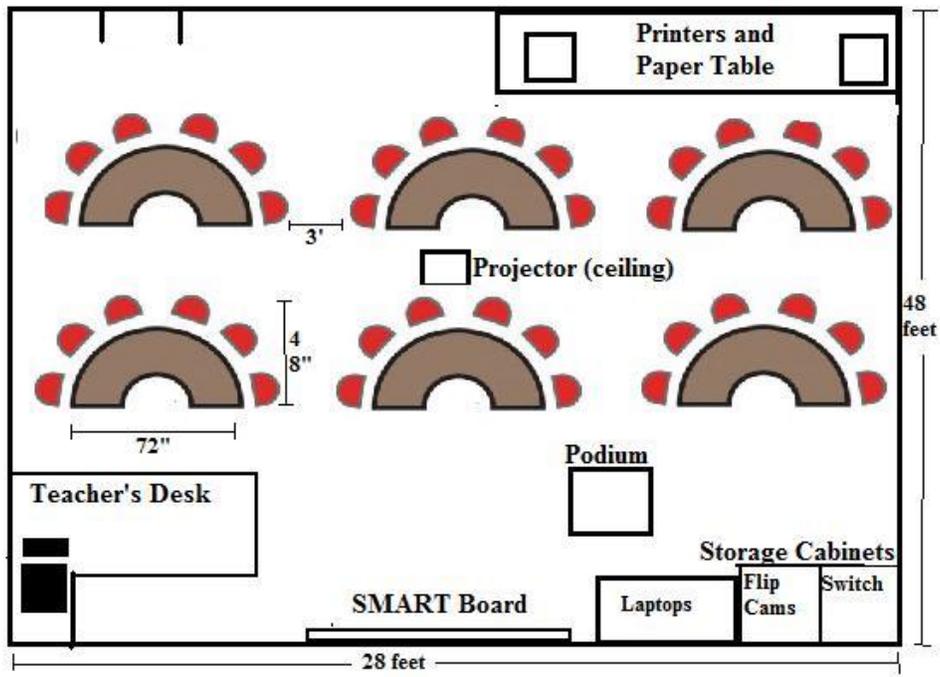Tiger Direct's website provides many prices, specifications, information, and daily deals for computers, hardware, software, etc. (http://www.tigerdirect.com).

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Laptop Comparison Table

	Compaq - Presario	HP Pavilion Laptop	Dell - Inspiron
Speed/Processor	2.2GHz Intel Celeron	2.13Gz Intel Core i3	2.2GHz Intel Pentium
File System	NTFS	NTFS	NTFS
Cache	1 MB L2	3 MB	1 MB
RAM	2 GB	4 GB	4 GB
Hard Disk	250 GB	500 GB	320 GB
USB 2.0	3	4	3
Battery Life	up to 3 hrs 45 min	up to 3 hrs 30 min	up to 5 hours 29 min
Video/Graphics		Intel Graphics Accel. 4500	Intel Graphics Accel. X4500
Card	Intel Graphics Accel. 4500M	MHD	HD
CDRW/DVD Drive	Double Layer DVD+RW/CD-RW	Double Layer DVD+RW/CD-RW	DVD+RW/CD-RW
Firewire IEEE 1394	0	0	0
Network Card	10/100 Base-T Ethernet	10/100 Base-T Ethernet	10/100 Ethernet LAN
Speakers	Altec Lansing	Altec Lansing w/ SRS	Internal
Warranty/Service	2 yr.	1 yr limited	1 yr.
Microsoft Office	Student 2007	Student 2007	Student 2007
Other Software	Norton AntiVirus	Norton AntiVirus	Norton AntiVirus
Screen	15.6	15.6	14
Cost	329.99	679.99	449.99
Cost for 30 Machines	9899.97	20399.7	13499.7

Network Map

Room Layout