

Distance Learning for Workforce Development

Computers for Use in Participant Homes

1. Accept the importance of the computer

It could be said that the computer is the Rodney Dangerfield of home-based distance learning. They get no respect. Everybody wants the cheapest computers, free if possible, and they don't think about them much more than that.

Yet, in home-based distance learning, the computer in the participant's home is as important as the buildings in which a college conducts its classes. If there is no building, there is no class. The building has to be built correctly – following ADA code, using correct building permits, etc.. It has to be laid out for its intended use – big auditoriums for giant lectures and small offices for administrative tasks. And, it has to be maintained – it always needs the janitor and occasionally requires big fixes. Participant computers need the same types of planning and attention that a brick and mortar building does.

Budgets for home-based distance learning pilots frequently start with the idea that “we can get computers for this “low amount of money” or “donated”. Be careful in establishing your budget because computers that aren't built well-suited to your program requirements and/or aren't maintained will cost you additional money in the long run. Your “computer” budget line item may be lower, but your budget will grow for additional costs such as staff time, technical support, and replacement parts. In a worst-case scenario – you may have lower success rates because your participants can't complete their objectives on a computer that is not working.

EXAMPLE: You find that you can save \$29 on the cost of a computer by not purchasing name brand virus protection software. You choose to use free virus protection software but you are unsure of its quality. A lack of virus protection may cause you many many hours of additional technical support – as many as ten extra hours per computer (or more). You're probably paying your technical support staff person around \$15 per hour. If they spend ten extra hours on each computer fixing virus related issues, you've actually added \$150 to the cost of each computer while you were trying to save \$29 by taking a chance on the quality of virus protection software.

Accept that the computer is a major discriminator in the success of your program. Choose your hardware, software and vendors carefully. Poor quality hardware can multiply (not just add to) technical support requirements that go far beyond cost effectiveness. A program that is unsuccessful because the computers didn't work can do more harm to the future of distance learning than not doing a program at all (“see, I told you, it just doesn't work...”).

2. Choosing the Computer

Will you offer a desktop computer or a laptop? Consider the big picture of your program. If you know you want your participants to take the computer with them to places other than their homes (i.e. school or work) you would select laptops. If you don't want the computers to go anywhere other than where you put them (i.e. a program in a prison) you would select desktops.

Advantages to laptops: Laptops can produce higher rates of participation. They are put to use more immediately after orientation (especially if you allow participants to take them home from orientation). They have less costs in shipping (or otherwise transporting to the participant home) and installation. They take up far less room than desktops when being stored. They can be utilized anywhere (especially with wireless access cards). Just like all of us, participants use them more because they are more convenient. We also find that participants have a stronger personal bond with their laptops than with desktops.

Advantages to desktops: Desktops are what the majority of employees will find at their place of work. Desktops are not easy to transport. Desktops are slightly cheaper than laptops. Desktops are less expensive to repair than laptops. Knowledge of a desktop is easier to transfer to a laptop than vice versa. If your first experience with a computer is a desktop, you have a better chance of understanding how the separate pieces were put together to be more compact in a laptop (oh, the mouse is now this touch pad) but if your first computer experience is a laptop, you may not be as aware of the separate components so it may be harder to transfer the knowledge (this curved half ball mouse thing is now my touch pad?).

3. Software

Whether a laptop or a desktop, you must determine what software your computer needs to have. Computer vendors will offer packages that contain many types of common software. Make sure what you need is on the list.

Computers for distance learning programs need the following types of software:

- Operating System (such as Windows, Linux or other)
- Browser Software (such as Internet Explorer, Netscape or Mozilla)
- Virus Protection (such as Norton or MacAfee)
- Media Software (such as Flash, Media players, others)
- Security Software (such as firewalls, defenders, others)

Choices about additional types of software include:

- Document software (such as Adobe Acrobat for pdf, Word, WP, others)
- Accessory software (such as Paint, notebook, calculator, etc.)
- Office software (Excel, Access, PowerPoint, etc.)

- Publishing software (Publisher, Photoshop, etc.)

Other software you may need:

- Players for your distance learning courses
- Maintenance software with correct settings (cache maintenance, disk frag, etc.)
- Drivers for printers, faxes or other external equipment
- “Nanny” software if this method is your plan for filtering the Internet

Consider equipping your computers with as much software that corresponds to the type of training you’ll be offering online as possible. Participants can hone their skills after training is completed by using the software on their computers. Without it, they can’t explore the software on their own outside of the training courses.

4. Hardware

Once you’ve determined the software you want to have, you’re ready to find hardware that will be optimal for it. Even if you aren’t the tech guy, it’s important to understand what is in your computers. They are your brick and mortar so make sure you discuss them thoroughly with your computer vendors.

To simplify things, consider five major components in a computer: the processor, memory, hard drive, media and the thing that makes it all work together – the motherboard. If you have quality in these areas, you are on the right track. Your computer vendor and tech guy can discuss things in much more depth.

Much of how computer components are described uses numbers, but they don’t always tell the whole story. To learn the whole story, let’s review long-hand computer specifications (specs), shortened specs, and a translation in real English.

EXAMPLE: Hardware specifications for a laptop:

HP nx6110, Pentium – M730, 1.6 GHz Pentium Processor, Integrated speakers, 4.5 hour Lithium Ion battery, 24x CD/8x DVD DVD/CD-RW Combo drive, Mobile Intel 915 GM Express Chipset, 15” LCD display, 512 MEG RAM, 40 GB HDD, Modem, RJ-45 NIC, IEEE 802.11 b/g wireless, Intel Graphics Media Accelerator 900

In shortened form, the same specifications might read like this:

*1.6 GHz; 512 RAM; 40 GB HDD; 24x CD/ 8x DVD; DVD/CD RW Combo; 15”;
4.5 hour lithium ion*

In real English it means:

A Hewlett Packard computer with a motherboard in model #6110 category, with a Pentium M730 model Processor which means it is for mobile use (M) of the P4 class and it is of the 730 series; it is a 1.6 GHz Processor; speakers in the laptop; a battery that will last an average of 4.5 hours and is rechargeable; a 24 speed CD player and an 8 speed DVD; the CD and DVD are a combo player that is “writeable”; Mobile Chipset means the way everything is laid out on the motherboard is designed for mobile computers, a 15” monitor; 512 MEG of memory; a 40 GB hard drive; a modem for dial-up internet; a NIC card for broadband internet; a wireless card; and a video card that includes graphic acceleration

Processors control a computer’s speed and ability to run software. Processors are the fastest evolving technology within a computer. Newer better versions come on the market as frequently as every six months. The cost of processors moves down the longer they are on the market. You probably will never need the newest processor on the market (as of 2/07 the newest is the Intel Quad-Core Xeon processor), but you shouldn’t get anything older than a 2GHz Intel Celeron or an AMD Sempron (they’re hard to find unless you’re looking at used computers anyway.)

Example: Which processor is better – a 1.6GHz Intel Pentium or a 2GHz Intel Celeron? It seems like a 1.6 would be slower than a 2.0. Here’s where you need a good computer vendor with experience in the market. Reading beyond the number, you’ll see that the 1.6 GHz is a Pentium in the P4 series, which is higher quality than the Celeron 2 GHz or AMD 2GHz. Thus, processor numbers don’t tell you the whole story.

If you see a dramatically lower price on computer specs that look the same as specs for a higher-priced computer – ask about the specific brand and model of the processor. They do matter. For example, Intel makes both Pentium and Celeron. Pentium is the Lexus and Celeron is the Toyota of Intel. The high-priced computer might be an Intel Pentium and the lower an Intel Celeron – definitely not a comparison of apples to apples but a devious vendor might only tell you that they are both Intel processors.

Memory controls how much information your computer can store and how fast it can access it. Computers today should have at least 512k of memory. Many pieces of software can not run with anything less. 1 GB of memory is ideal, especially if your participants may run complex software (such as any of the Adobe Suite products or multiple pieces of software at once).

Just like processors, not all memory is created equal. Different manufacturers make different types of memory. A common major technical issue is mixing processors and memory that are not compatible. Make sure your memory will operate with the processor you are using.

The **computer hard drive** is where everything is stored on the computer. Today, hard drives are calculated by GB (gigabyte: which equals a thousand megabytes which equals a thousand kilobytes). Like memory and processors, not all hard drives are created equal.

Some hard drives will run faster than others because they can access the information stored much quicker. Also, the closer a hard drive runs to capacity, the slower it will become. Computers today should have a minimum of a 20GB hard drive. Windows operating systems and Microsoft Office can take 8 GB of a computer's hard drive space on their own.

The **media** you select for your computer might include a floppy drive (becoming harder to find in the market but still available) or a CD-ROM or a DVD player. Most software is installed on a computer through the CD or a DVD player, so you need one or the other. Many DVD players can also play CD-ROMs – these are called “combo” players. A “writeable” CD-ROM or DVD allows the participant to copy any type of files to the CD or the DVD. Make sure you know if any of the software you will be using requires a CD or DVD to be in the player to operate.

The **motherboard** of a computer is the circuit board that connects all the different components together (so that the processor can talk to the memory who can talk to the hard drive, etc.). Everything about a computer depends on the integrity of the motherboard. When you are buying a brand name computer, the model number refers to the motherboard you are getting (in our example we were getting an HP 6110 model motherboard). If you buy a non-brand name computer (sometimes called “whitebox”) you should make sure you are receiving a quality motherboard (and there are quality “generic” brands out there!).

5. Technical Support

No matter how much you spend on your computers, all hardware (even excellent quality) has the potential to have technical problems. In the computer industry, this is called the “failure rate.” Failure rates tell you what percentage chance there is for your hardware to fail (not necessarily completely fail – just have a technical issue that is generated by the equipment itself rather than by user error). New good-quality hardware generally has a 1% - 5% failure rate. Used computers can have 50% failure rates or higher. No computers have a zero percent failure rate (run from any vendor that tells you there is a zero failure rate!), so the idea is to get the lowest rate you can.

EXAMPLE: If the hardware you purchase has a 2% failure rate, you should anticipate that 2 out of every 100 times your participants attempt to use it a technical issue may come up. If you had 100 participants using their computers every day for 100 days, you should anticipate that 200 technical issues will come up.

If you're dreaming of a home-based distance learning project with no technical support or just the technical support that comes with the computer when you buy it – wake up! It just isn't going to happen. If you are serving populations that have little to no computer

experience (those that need the programs the most) the average computer industry levels of technical support will not be enough.

The computer industry expects their users to solve most of the small issues on their own (when in doubt, re-boot). They assume users will make an average of two technical support calls throughout the life of their computer. Your formula has to be that every technical issue may come back to you and if you don't resolve it – your program for that participant is shut down.

The true definition of “technical support” is support of the item you manufactured or developed, and only that item. Computer manufacturers and software developers have strong limits on what they will cover. You may start off calling your virus protection software provider, who'll tell you to call your computer manufacturer, who'll tell you to call a different software provider, who'll tell you to call your ISP, who'll...(it happens to all of us).

“Help Desk” is support that covers anything that happens on participants' computers (whether it is their fault or not). Home-based distance learning programs need help desk support. If those computers aren't operating, your program is shut down.

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Since 2000, Business Access has implemented 63 different workforce development home based distance learning programs placing computers in homes reaching over 17,000 people in three states. Program participants have spent more than 800,000 hours online and taken more than 50,000 courses through Business Access' online learning communities.

Programs include: TANF, WIA Adult, WIA Youth, Food Stamps, Career Advancement Vouchers, Individual Training Accounts, Foundation sponsored, U.S. DOL's Women in the 21st Century grant, NEG, Military Spouses, and others.

In a study by the Texas Workforce Commission TANF participants utilizing the system were nearly 3 times more likely to be employed after exit and earned an average of \$1,118 more in the first post-exit quarter than TANF clients in other programs. This study included regression analysis.

In a study by the Sloan Center for Innovative Workforce Training and Development and Rutgers University Center for Women and Work, post-TANF participants in New Jersey were found to have 92% program retention and an average of 14% earnings increase.

Independent results compiled by the rural Concho Valley Workforce Development Board showed 156% earnings gains and 90% participation.

The Business Access In-Home Learning System has been noted in the last two reports of U.S. HHSC Urban Partnerships for Welfare Reform, a consortium of 26 major cities representing the majority of the TANF population nationally. It has been recognized by HHSC Peer Technical Assistance, U.S. Department of Labor (JETTCO) and the National Association of Workforce Boards.

It has been independently studied by Rutgers University Center for Women and Work, the Sloan Center for Innovative Workforce Training and Development, the University of North Texas and the Texas Workforce Commission (twice). It has been featured in National Governors Association materials and received other accolades.

The In-Home Learning System is a technical platform for the online delivery of workforce development services. Online communities are localized and include multiple training vendors, content providers and resources. Automated systems manage workflow addressing the issues of computers, Internet access, help desk support, advocacy, reports and communication with government entities. Business Access holds U.S. Patent # 6629843 for the In-Home Learning System, called "Personalized Internet Access." For more information please visit: <http://www.business-access.com>