

19. Using Computers in Your Library

This chapter describes the steps to take when thinking about adding computers to your library, the kinds of equipment you will need, some destinations for learning online, and suggestions about making rules for your users.¹ If this chapter is not relevant to you now, you may skip it. Perhaps it will be useful to you in the future.

Are you ready for computers in your library?

If your library space has access to electricity, and your library staff has the funding and enthusiasm to care for computer equipment, you may be ready to add a world of information to your library's collections. However, a lot of pre-planning is required before the computers arrive, and they require time, labour, and funding at the initial stage and on an ongoing basis.

Computers are like expensive livestock. While they provide wonderful resources, they cost money to feed and maintain, they can get viruses and worms, and they can die. However, unlike livestock, they cannot create offspring themselves. An initial donation of computers or similar resources is just the start of an ongoing expense your community will have to provide.

Many schools in industrialised countries avoid setting up computer labs in their libraries because of the cost involved in repairing, replacing, and

Before you decide...

- Discuss with your library committee the specific costs and benefits of having a computer.
- Visit a library that uses computers.
- Find sources for continuous funding and training.
- Decide if and how you want to use a computer in the library.

¹ Some of the information in this chapter is from *Libraries for All*, a manual written by Laura Wendell for UNESCO (1998), used with permission from UNESCO.

upgrading hardware and software. In the 1990s, many public libraries in the US required continuous outside funding (from the Gates Foundation) to introduce and maintain computers for library users. Eventually, these libraries included maintenance costs in their budgets and hired special staff to work with computers.

If you have a number of library users who know how to use computers, they may encourage you to install computers that are available to library users, and they may have ideas about how they can be maintained. If a school wants a computer for staff, it might be more appropriate and safer to put a computer in an office instead of the public space. Computers belong in libraries when they expand the quest for knowledge beyond the print collections.

What you need to accompany one (1) computer:

- Electrical outlet
- A plug and cord that match the socket type, watts, and volts for your local electrical system
- A surge protector
- A monitor
- A keyboard
- A mouse
- A mouse mat
- A room that can be locked with secure windows
- A room that is dry and protected from dust
- Designated table and chair
- In dusty areas, a cover for the equipment when it is not in use

Consider what you have available. Do you have reliable access to electricity? Is there a business that provides computer support nearby, and will you be able to pay the fees needed for repairs? Is there a company that provides Internet access, how can you connect to it, and how much

does it cost? Who will train users to enjoy the library's computers, and does this person have the time to do this? Can the computers be stored in a secure building?

Questions to answer:

- What equipment do we need, and can we maintain it over time? What equipment should we start with?
- Who can help us maintain the computers?
- Where will our equipment go inside the library? Where will it go in relation to electrical outlets?
- When? When will there be someone to watch the equipment, and when will learners get to use it?
- How will we train the users and maintain the equipment?



Figure 19.1. This library in Malawi has one computer for library users to share. To keep it clean, it is covered when not in use.

Digital technology vocabulary

You may have heard a lot of the vocabulary surrounding computers and the Internet, and there are new products

and services all the time! Here are some basic descriptions of computer concepts and types of equipment.

A computer is a machine that processes and stores information. Mobile phones are computers, and when they are connected to mobile networks, they help you communicate by receiving and sending information. The computers that will be useful to you in a library will need electricity, hardware, and software. Computers are more useful when they can access the Internet, but there are many ways to use and enjoy them without an Internet connection.

Personal computers (or PCs) require an operating system, which directs the computer's actions, and software programmes (also called applications), which give you the ability to do things with the computer. For example, if you have a desktop computer that uses a Windows operating system, you can use a programme called Microsoft Word to type letters and create signs for printing. In order to print things from your computer, you need a printer, software for the computer to send instructions to the printer, special ink for the printer, and, of course, paper.

Some computers come with their operating systems already installed, and others require you to install the operating system and the software. You can add software to your computer using a device (DVD, CD, flash drive) or you can download it using an Internet connection. In many cases, software and operating systems cost money. For example, the Windows operating system owned by the Microsoft Corporation costs money to buy and use. However, Linux-based operating systems are free and include free software for download from the Web.

There are many kinds of computers that could be useful in your library. Desktop computers usually stay in one place, and a desktop system requires the computer device itself (often the size of a small suitcase), a monitor or screen,

a keyboard, and a mouse. A computer's effectiveness depends on the speed of the processor (measured in hertz), the amount of memory it has, and the size of its hard drive (both measured in bytes).

BYTE SIZE

1 bit = smallest unit of data used by a computer

1 byte = 8 bits

Kilobyte (KB or K) = 1000 bytes (about one paragraph of text)

Megabyte (MB) = one million bytes

1 CD-ROM holds about 700 MBs

Gigabyte (GB) = one billion bytes

1 DVD can hold about 5 GBs. Most computers have a few GBs of short-term memory.

Terabyte = one trillion bytes

A server with a terabyte of content will provide countless multimedia files for a local area network (LAN). Most new computers can store one or more terabytes of information.

Laptop computers are more portable, and they include the computer, monitor, keyboard, and mouse. In the past, laptops were generally more expensive than desktop computers, but a number of small laptops, often called netbooks, are now less expensive. Keep in mind that netbooks, tablet computers, and smartphones were originally created for mobile users with regular Internet access. In addition, their small size makes them easier to steal!

Accessing digital information

There is countless information available on the Internet, and most people get to it from their computers through the World Wide Web, an interconnected network of digital content,

including websites and web pages. You can view web pages and sites using special programmes called ‘web browsers’. Some of the more popular web browsers are Firefox, Internet Explorer, and Google Chrome, and they direct you to resources with URLs, the specific addresses for websites (e.g. www.google.com and www.africanlibraryproject.org are URLs). URLs end with particular letters, or codes, depending on the type of organisation responsible for them and the country from which they originate. For example, a site that ends in ‘.edu’ usually comes from a school in the United States, and a web page that ends in ‘.gov.za’ comes from a site belonging to the South African government.

URL Endings

- .com = a company
- .edu = a school
- .gov = government

The World Wide Web is a treasure trove of information for discovery! As you explore websites and introduce your users to them, always consider the source of the information. Anyone with the available tools can publish pages on the World Wide Web, so would you trust the word of just anyone? Teaching Internet users to evaluate what they have found is an important part of a librarian’s job. Particularly for new Internet users, a checklist of questions for deciding whether a web page is useful helps clarify how web content is created and why it is shared. Even if you don’t have Internet access in your library, if you think the library users are accessing the Internet in Internet cafés or via mobile phones, it would be a good idea to teach them about evaluating resources that they find online. Finding information online is like fishing: you may catch fish, but you may also catch a snake.

Wikipedia, the Free Encyclopedia, is a huge website filled with information and countless details. It is unique because its content is authored by many people around the world, and no one in particular. For example, do you know who has written, updated, and edited Wikipedia's entry for the African Library Project (en.wikipedia.org/wiki/African_Library_Project)? Sites

like Wikipedia have lots of essential information, as well as some unreliable content. How do you know what to trust? Verifying what you find on the Web involves a bit more time. Since you have access to many websites, you can verify the information with more than one source. For example, using www.africanlibraryproject.org can help you verify the ALP Wikipedia article.

Some URL Endings by Country

- Botswana = .bw
- Ghana = .gh
- Kenya = .ke
- Lesotho = .ls
- Malawi = .mw
- Sierra Leone = .sl
- South Africa = .za
- Swaziland = .sz
- Uganda = .ug
- United Kingdom = .uk

Web Evaluation ABCs

Authority and Accuracy: Who is the author, and what authority do they have on this topic? Can you confirm the information is true from another reliable source?

Bias: What is the purpose of the information? Is the author trying to get you to buy something? Or to believe something that may or may not be true?

Currency: Is the information up to date?

In general, finding digital content can be done by searching or browsing. Using a search engine (e.g. Google) is a common starting place in research, and is useful if you know what terms to use, but it can lead to many unreliable sites. Effective Internet research involves a combination of searching, browsing, and constant evaluation of sources. Chico State University has a useful guide for evaluating sources: https://www.csuchico.edu/lins/handouts/eval_websites.pdf

In addition to evaluating web content itself, you must also evaluate the programmes you are asked to download from the Web while you are online. 'Computer viruses', 'malware', 'spyware', 'worms', and 'adware' are terms for the unwanted computer programmes you can unintentionally download to your computer from the Internet or through the discs you plug into it. Some of these programmes can 'kill' your computer, and many will make it run poorly.

Some Common Digital File Formats

- .doc = Documents for reading, writing and printing
- .exe = Executable file for loading software onto your computer
- .html = A web page file format
- .jpg = Images, especially photos
- .mpeg = Media file, such as audio or video
- .pdf = Documents for reading and printing
- .rtf = Rich text files, such as documents for reading, writing, and printing
- .txt = Text only. Many books are available for free download in this format.

Digital formats

Digital content comes in many different formats. Once you have found useful information on the Internet, it may require special programmes to read or use. Sometimes you will need to download software through your web browser. For example, you may find a useful book, handout, or article that ends in 'pdf' and it will require free software called Adobe Reader to appear on your browser or computer. It is difficult to know when software is useful or harmful. Search the Internet for advice on the formats and the software.

For digital content available offline, you also need special software or hardware. Your computer discs require special disc readers. For example, DVDs, which can contain multimedia files, including encyclopaedias, games, and movies, need to be played in a DVD disc drive. You need a USB plug on your computer to load content from a USB drive, which is highly portable for moving materials, but can also easily spread malware.

Implementation: setting up computers and digital access

Rules for library users

In general, the most important rule to consider is who will be allowed to use the computers. While your computers could ideally be available and accessible to all as learning tools in universal education, this may not be realistic in the beginning. In schools, you can use computer access as an incentive for good behaviour; in a small community library, you could charge fees to those who use the computers, in order to pay maintenance costs. Time limits on computer use are common for libraries around the world, as are rules requiring clean hands and no food or drinks nearby.

Once you have decided to include computers in your library, there are many set-ups. You may start with one computer and add Internet access and more computers, and each new addition creates new questions to consider.

Here are some common set-ups for small libraries:

1. One library computer for staff or selected users/no Internet connection

Perhaps your library users want a place to create and print

Computer Use Policies

Who?

What?

Where?

When?

How?

letters, or you would like to manage your library's collections using a computer catalogue. You may have electronic resources available via CD-ROM or DVD. A single computer in a secure location works for all of these

possibilities and more. If your monitor is big enough and your computer connects to a DVD player, you can show movies. A school can use the laptop as a portable tool for classroom demonstrations or can restrict its location to the library building.

Who gets to use it? If it's for staff only, they will still need rules and training. If it is for the public or learners, create rules and plan for enforcing them. Who supervises users? What system will they use for signing in or timing users, and who will help them?

2. One library computer for users/Internet connection

If you are able to access the Internet, there are more possibilities for finding additional resources on demand, and for communicating with users around the world. Global exposure is not always good! Give your users some rules and education about what they can download and where they should go. Malware can hide in your computer during your digital travels, but firewalls and anti-virus software can provide protection. Some libraries also choose to add Internet filters to their computers to restrict the type of information their users see.

3. Multiple computers with a Local Area Network (LAN)

You may have slow or unreliable Internet access. If you have multiple computers, you can connect them to each other so they can share resources using a local area network (LAN). This is useful when you have large numbers of CD-ROMs, programmes, and files on a few computers, or if you own a server, a digital library of thousands of resources available through a computer connection. This set-up will require a consultant with the technical know-how to set it up, but it is an effective solution to providing a lot of resources to your community without dependence on an Internet connection. One example is the eGranary Digital Library (www.widernet.org/eGranary) provided by the WiderNet Project.

4. Multiple computers with Internet connection

Having more computers with access to the Internet means more resources and access! The rules you create about who can use them, what they can access, and how long they can spend at a time become even more important, as does your effort in enforcing the rules! Depending on the connection and service you use, the number of computers will affect the speed of your Internet connection, particularly if one computer in the bunch is downloading a large file (many bytes). Connecting your computers to each other and the Internet may require a server, and you will need to budget for computer support and someone to supervise computer lab hours and users.

5. Laptops with wireless Internet connection

In some parts of Africa – especially rural areas – access to the Internet through wireless and satellite connections is the best way to get online. Laptops, netbooks, and other portable devices may be less expensive and may be geared towards your library users. One example comes from One Laptop per Child (one.laptop.org).

Having more access and more users means more opportunities to break, steal, and infect your computers,

and if you have policies for how to handle these situations, you will be able to enjoy them better. Try to visit a library or school that has laptops and wireless connections to learn about their rules and experiences.

- Who will guard the computers and manage them when they are not in use?
- Which groups can use the computers?
- Where can the laptops go? (Classrooms? Offices? Hostels? Home?)
- What happens when a computer gets broken? Stolen?

Resources

Reading Books Online (for Free)

- International Children's Digital Library: en.childrenslibrary.org/index.shtml
An interactive collection of digital books from cultures and languages all over the world.
- Online Books Page: onlinebooks.library.upenn.edu is a place to search a comprehensive set of books available for free online from different digital libraries, such as Project Gutenberg and Hathi Trust.

Learning English Online

- BBC's Learning English Portal: www.bbc.co.uk/worldservice/learningenglish
- Learning English from Current Events: www.breakingnewsenglish.com

Using the Internet and Computers

- Evaluating Internet Resources: www.library.georgetown.edu/tutorials/research-guides/evaluating-internet-content

LIBRARY TIP

In Malawi, the librarians who are graduates of DAPP Teacher Training College build pedagogical workshops for their primary schools that are also used by the community. In addition to housing the library, they have computers. At the end of the reading room is a large television in a cabinet that can swivel around to be displayed outside. There are benches outside so the community can come and watch movies at night.



Figure 19.2. At night, community members sit at these benches to watch a movie on the television that is located behind the shutters (Malawi).

- Evaluating Websites: prezi.com/ow_pw0vbsfsz/evaluating-websites-presentation from Lara Skelly of the University of Cape Town Libraries (SA)
- Beginning Guide to Computers: www.homeandlearn.co.uk includes free online courses for complete beginners.
- W3 Schools Tutorials: www.w3schools.com includes tutorials for those who want to learn how to make websites themselves.

Internet Resources by Subject

- OpenDOAR provides a quality-assured listing of open access repositories around the world which provide free access to research information. <http://www.opendoar.org/>
- Wikipedia: en.wikipedia.org/wiki/Portal:Africa
The world's 'Free Encyclopedia' written and edited by volunteers can be edited by anyone, so it is a good idea to verify what you learn here. The 'References' and 'External Links' sections are often very useful for finding additional websites on your topic.

Distance Learning in Africa

- Open Educational Resources Africa: www.oerafrica.org
Facilitated by the South African Institute for Distance Education, this site includes portals for agriculture, health, foundation courses, and teacher education.
- Tessa Africa: www.tessafrica.net
Teacher Education in Sub-Saharan Africa is facilitated by Open University from the United Kingdom and is a resource site for teaching materials from Africa.
- African Virtual University: www.avu.org is an intergovernmental organisation providing diplomas and degrees.

Computer Donations and Training

Collaborative initiatives in your area may be the fastest and most effective ways to get computers in your library. They can provide installation, training, and ongoing support to many communities, who can then learn from each other. There are many smaller NGOs targeting Information and Computer Technology (ICT) development in individual African countries, and major donors sometimes prefer to work at the country level. Here is a list of some major charities, most of which charge fees for refurbishing and shipping and sometimes for the hardware:

- Computer Aid International: <http://computeraid.org> is a UK-registered charity that refurbishes computers for distribution to the developing world. In addition to sending PCs, laptops, and operating systems, they

recently launched the ZubaBox, a solar-powered Internet café.

- InterConnection.Org: www.interconnection.org is a US-based charity providing refurbished computers.
- IT Schools Africa's Computers for African Schools Project (ITA-CFAS): www.itschoolsafrica.org sets up Internet computer labs in African schools and provides training and support.
- WiderNet Project: www.widernet.org is a US organisation providing training and resources in areas with poor digital communication. The eGranary Digital Library is their 'Internet in a Box', providing millions of multimedia documents through local area networks.
- World Computer Exchange (WCE): www.worldcomputerexchange.org is a US-based charity that provides used computers and technology to schools, libraries, community centres, and universities in developing countries.

