CHAPTER 2

Online Learning Equipment

As you learned in the previous chapter, the traditional brick-and-mortar learning environment has been transformed by online learning. Traditional learning is no longer the only option available to learners and educators. Over the years, online learning has given learners the flexibility to learn new skills at their convenience using whatever medium was available at the time. It also allowed educators to teach on their schedules. Today, the Internet is the primary online learning medium. A physical classroom environment is no longer the only option which helps remove some educational barriers. You might be eager to become an online learner or online educator but are unsure of the necessary equipment needs. What do you need to get started?

Technology Needs

Whether you want to be an online learner or an online educator, your success depends on one critical component: technology. Technology is at the heart of online learning. It is the conduit through which learning happens. Without the right technology, you will not be as productive or efficient. Likewise, you will also waste valuable time and money. As a result, you will not receive the benefits that online learning offers. The good news is that the technology that is needed for online learning is minimal.
Hardware

Although you do not need to have the newest computer, it still needs to be no more than 2–4 years old. Computer technology changes rapidly, so what is current today will be obsolete in about 2–5 years. Most learning institutions provide learners and educators with hardware requirements to work with their technology infrastructure. A good rule to follow is to have an operational desktop or laptop computer that is 2–3 years old with the following minimum specifications:

- Windows 7 operating system or Mac 10.2 Sierra operating system or higher
- Intel i3 dual-core processor or AMD equivalent or higher
- 2 GHZ processor or higher
- 1GB of free disk space
- 4GB of memory or higher
- Webcam

You can use an older computer. However, it will affect the performance of your online learning experience. The higher your processor speed and memory are, the more applications can be opened simultaneously. Your computer will also operate faster.

Chromebooks are smaller laptops with smaller screens that operate Google’s operating system, Chrome OS. Typically, they are less expensive than desktops and laptops and utilize Google’s cloud-based applications such as Gmail and Google Drive. Due to their slow processor speed and a small amount of memory, they should not be the primary choice for postsecondary online learning involving programming or other processor-intensive courses. However, they are a good choice for primary and secondary learners. Another Chromebook limitation is that they cannot operate without Internet access.

As the size of mobile devices continues to increase, they will continue to add to the flexibility of traditional and online learning. Many learning resources are available as apps via these devices. Notification apps such as Remind and Show My Homework can help educators communicate not only with students but also parents. Some mobile devices can be more expensive than desktops or laptops. They also lack a physical keyboard. It must be purchased separately. Lastly, they are limited in their processing speed and memory. Due to their portability, they can be great to use to supplement learning on the go.
Printer

Although most of your online learning occurs online, you will have times where you will want to print documents. Having an inkjet or laser printer allows you to print when needed. The initial cost of an inkjet printer can be less than a laser printer. However, laser printers can print more pages with their toner compared to inkjets. Today, many all-in-one printers are available that include a scanner, which can save you money and space.

Scanner

Having a scanner is good to have but not a necessity. If you do not have a scanner, do not fret. Many scanning apps are available for free and a fee on mobile devices. For instance, the Notes app is freely available on iOS devices and allows you to scan documents.

Software

The main software that you will need is a web browser such as Firefox, Safari, Edge, or Google Chrome. A web browser is typically how learning materials are accessed. In addition to a web browser, you will need some additional software.

Microsoft 365

Microsoft Office is the industry standard application for schools and organizations. It allows you to create documents, presentations, spreadsheets, and more using its popular programs such as Word, PowerPoint, and Excel. It also contains Microsoft Outlook for email and OneNote for cloud-based storage needs. For primary, secondary, and postsecondary students and educators with an email address ending in .edu, Microsoft 365 can be downloaded for free from the Microsoft website (Figure 2-1). Subscription information is available on the Microsoft website.
Also, Microsoft 365 and Google Docs apps are freely available to use in the Apple App Store and Google Play Store. Many cloud-based applications make it easier to use these applications on computers and mobile devices. However, without a paid Microsoft 365 subscription, the functionality is limited.

Antivirus Software

Since you will be working on the Web and uploading and downloading files, it is a good idea to have antivirus software installed on your computer or mobile device. Antivirus software protects your computer from viruses and other threats that can infect your computer or mobile device and cause harm. Once antivirus software is installed, it should be programmed to automatically update itself to protect your computer or device from new threats that arise daily. A few popular free antivirus software options that also include paid options include

- Avast – [www.avast.com](http://www.avast.com)
- AVG – [www.avg.com](http://www.avg.com)

Other popular paid antivirus options include

- McAfee – [www.mcafee.com](http://www.mcafee.com)
- Norton – [www.norton.com](http://www.norton.com)
PDF Reader

PDFs are the standard document type used on the Web. They can be viewed on all devices as long as a program such as Adobe Acrobat Reader is installed. Adobe Acrobat Reader is the industry standard for viewing PDFs and is free for download from the Adobe website (Figure 2-2).

![Adobe Acrobat Reader](https://get.adobe.com/reader/)

**Figure 2-2.** Adobe Acrobat Reader available for free download from Adobe website: [https://get.adobe.com/reader/](https://get.adobe.com/reader/)

Cloud-Based Storage

Since online learning provides the flexibility to work from anywhere, you need access to your files from anywhere and from any device. Cloud-based storage can also be used to back up important files. Some popular cloud-based storage options include

- Microsoft OneDrive (comes with Microsoft Office 365)
- Dropbox – [www.dropbox.com](http://www.dropbox.com)
- Google Drive – [www.google.com/drive/](http://www.google.com/drive/)

Graphic Design Software

In addition to your typical software needs, you might require graphic design software to create graphics for videos, websites, photography, and more. For your graphic design needs, the Adobe Creative Cloud consists of industry standard apps such as Photoshop and InDesign and is available at
www.adobe.com. It contains desktop and mobile apps for your creative needs. You can purchase either individual apps or all Adobe apps for a monthly or yearly subscription fee. Teachers and students with valid proof of eligibility (i.e., school ID or school email address) receive discounts on the purchase price.

Although Adobe Creative Suite is great for graphic design, it can be expensive. Some free and open source graphic design software include the following:

- Gimp – www.gimp.org
- Canva – www.canva.com

Internet Connection

Without an Internet connection, online learning cannot occur. Today’s smartphones and mobile devices such as iPads can serve as personal hotspots for Internet access, but the speed is not always comparable to Internet connection speeds in our homes, libraries, or restaurants. Before Covid-19, local libraries and restaurants could be visited to use the Internet for free. However, many closed their doors for safety reasons during the pandemic. In many communities and rural areas, the Digital Divide exists where high-speed Internet or broadband Internet is neither available nor affordable. As a result, many are left without Internet access.

Since today’s online learning consists of multimedia and other resources, a high-speed Internet connection is required. According to www.reviews.org, a high-speed Internet connection is one in which the download speed is of a minimum of 25 Mbps.¹ The number of US households with high-speed Internet has increased from 65% in 2018 to 73% in 2019.²

Accessories

Now that you know your core hardware and software requirements needs, there are some necessary accessories you will want to purchase. These accessories will allow for a better online learning experience.

Headset with Microphone

Depending on your environment, it is always a good idea to have a headset with a microphone. A headset allows you to review multimedia content privately without relying on your device’s speakers. You also will not disturb

¹www.reviews.org/internet-service/what-is-high-speed-internet/
²www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019/
others around you. For learning activities that require you to use your voice, a headset with noise cancelling microphone is a good investment. It can filter out background noise and allow your audience to hear you loudly and clearly. Most computers and mobile devices are equipped with internal microphones. However, they are directional and pick up all background noise in a room rather than filtering or reducing it. They also do not provide good voice quality compared to external microphones.

An external headset with noise cancelling microphone is not expensive. It averages around $40 but increases in price based on the noise cancelling level. Whatever headset you select, pay attention to whether it uses a USB, lightning port, or 3.5mm plug for your device (Figure 2-3).

For iPhone users, Apple’s EarPods with lightning connector is also another option (Figure 2-4). It also has a 3.5mm adapter option which can also be used on computers, and on later model iPhones and iPads as well as other mobile devices. Most smartphones come with headphones with a microphone that can be used until you find a replacement. Although the Apple EarPods have a microphone, they do not provide noise cancelling.
Webcam

Although a webcam is optional for some online learning, it is a nice complement. Most computers and mobile devices come equipped with a webcam. For learners, it brings a face-to-face component of traditional learning to the online classroom. For educators, a webcam provides many benefits. First, it allows educators to record their course content and share it within the virtual classroom. The content can also be repurposed and shared on various social media platforms. A webcam lets educators make a personal connection with their learners. When learners can put a face with a name, it can relieve some of the isolation and anxiety of online learning.
If you do not have a webcam, your mobile device's camera will work. Most mobile device cameras have a high resolution that can not only take great pictures but also record videos. For example, the newer iPhones after iPhone 7 have superior cameras that can be used to not only take pictures but also create videos. The same goes for the new model iPads. If you use either of these, you will need to purchase a tripod to hold the device steady.

Summary
As we have seen, the technology equipment needs for online learning are minimal. Many of these items you probably already have, which saves you time and money. It also helps to resolve some of the myths you might have heard about getting started with online learning. Trying anything for the first time can seem like a daunting task, but you can do it. With the right equipment, your journey can begin with a positive start. In the next chapter, you will explore how to successfully plan for your online learning journey. As the old adage goes, “If you fail to plan, you plan to fail.” You will have a plan.