Chapter 3
Mobile Handheld Devices in Education

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ABSTRACT
Small electronic devices, also referred to as handhelds, are impacting education in a variety of ways including teaching methods, student life, and the need for support from technical staff. This chapter discusses the importance of handhelds in education, how handhelds are being used in education, the challenges presented by handhelds for those in education and what might happen with handhelds in the future.

INTRODUCTION
Small electronic devices have been around in one form or another for decades but now with the introduction of the iPhone, the iPad, the Android phone and even devices such as the iPod Touch some real computing power has been put into small packages. Small electronic devices such as these, also referred to as “handhelds,” are beginning to have an impact on education. This chapter will discuss what is included in the handheld category and will look at the impact of handhelds in education from the standpoint of the instructor, the student, the technical staff, and the educational institution.

BACKGROUND
Before discussing the status of handhelds in education, it is important to discuss the various kinds of small devices available because each type of device gives different options for use by students, educators and school administrators. At present, there appear to be a few different broad categories of handhelds along with some sub-categories.
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One category is the smart phone. The iPhone and the Android phone can be categorized as **smart phones**. There are several other brands that fit into this category but these two by far make up the bulk of the market currently. A smart phone starts with the phone concept and adds in the ability to run other applications (normally called just “apps”) such as web browsers and a host of other types of programs.

Another category would be those devices that are similar to smart phones but do not have the capability to make or receive phone calls. In this category would be devices such as the iPad™, the iPod Touch™ and a host of other similar devices. This category is in the process of being refined into two different groups. The first, and more traditional group, is the pocket-sized MP3 player. The smallest of these can simply play music while the larger, more sophisticated ones, can do almost everything a smart phone can do except handle phone calls. The second group is a bit larger and more powerful. This group includes devices such as the Amazon Kindle, the Barnes and Noble Nook and, of course the iPad which sparked a revolution in thinking about the personal computer and small devices.

Apple introduced the iPad in April of 2010. Computer World ran an article in March 2010 talking about the host of iPad™ clones based on Linux, Windows and other operating systems that were in the process of being developed (Vaughan-Nichols, 2010). According to CNET News in a September 7, 2010 article, there are currently at least a half dozen or more iPad clones either on the market or soon to be on the market from manufacturers such as Dell, Toshiba, HP and Samsung. To blur the categories a bit, some of these iPad-like devices will be able to also be used as communication devices making calls and sending text messages. Virtually all of these devices will be able to run applications, connect to Bluetooth devices such as headsets and keyboards and most will be able to connect to 3G networks. Some, such as the Samsung Galaxy Pad will come only with a 3G subscription and will be sold through the various telephone carriers’ outlets (Ogg, 2010).

**CURRENT STATUS OF HANDHELDs IN EDUCATION**

**From the Teaching Perspective**

**Advantages**

Small devices can add a significant number of advantages to the classroom. The most obvious is size. Most devices are no bigger than a deck of playing cards. Even those that are much larger than a deck of cards are very thin and easy to store. Applications are being developed almost daily for these devices. Even though there are different operating systems, many, if not most developers are creating their apps on multiple platforms making them available for both the Apple and the Android line of small devices. Book management applications are a good example of this cross-platform development. Currently, in addition to reading books and magazines in print, it is possible to read them with specially designed hardware/software such as the Apple iPad, Amazon’s Kindle and Barnes and Noble’s Nook. All three of these devices have some real advantages for the instructor and for the student. The Kindle has probably one of the most impressive statistics for battery life of just about any device; it boasts a full month of use on one charge with the wi-fi turned off (“Kindle”, 2011). It accomplishes this by the use of a special e-ink technology that is able to keep a display on the screen even though the computer is in a kind of sleep mode. For between $139 and $379, depending on options and screen size, it is possible to have a device that can hold up to 3500 books at the same time (“Kindle”, 2011).