Chapter 7
Technology Empowerment and the Deployment of Netbooks in Education

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ABSTRACT

Netbooks are mini-laptop computers designed for mobility, online access and general office applications. Their great popularity with consumers promises equal impact on the technological landscape. This chapter is an exploration into the current state of netbook technology, its strengths and weaknesses, impacts on society and industry, and the challenges for deployment in educational institutions. While a netbook may not be able to satisfy all educational requirements because of performance and security issues, it is a reasonable alternative to fulfill the basic need for most students. Faculty and students will use netbooks on their own because they are trendy, cheap and portable. It is important for educational technologists to get involved, establishing policies so that the technology can be used safely.

INTRODUCTION

Netbooks are mini-laptop computers designed for mobility, online access and general office applications. The research firm Gartner predicted that 2009 will be “the year of netbook”. Shipment in the Asia Pacific region is expected to grow by 82% from last year, and account for 14% of all laptop shipments by 2011 (Tay & Tsai, 2009).
Netbooks are very popular with consumers. Enterprises too, are experimenting with these devices. Some schools are issuing netbooks for staffs and faculty while travelling, accessing campus servers via Virtual Private Networks (VPN), using cloud computing to run applications, negating the need for expensive laptops (Vaquero, 2009).

Netbooks were originally designed as the second home personal computer (PC) for consumers in developed countries. They were originally dubbed mini-notes, sub-notebooks or mini-laptops before the term “netbooks” was adopted by consensus. Though netbooks made a big splash in the PC industry, debate continues on whether netbooks deserve their own classification, and an industry standard definition remains elusive. In an ad hoc manner, netbooks can be defined as lightweight laptops with lower price and capability. As an indicator of their popularity, netbooks received a category of their own at a popular consumer electronic store’s online catalogue just recently. The introduction is the following:

A netbook is a streamlined mobile device designed for the Internet, so you can stay connected on the go. Get up-to-date news, the latest scores and weather information, access your e-mail and social networking sites, and enjoy digital videos, photos and music. Netbooks may look like laptops, but they don’t have the full capabilities of a computer. Instead, a netbook specializes in mobility and the Web, so it’s great for travel or as a supplement to your main PC. (Best Buy, 2009)

WHAT IS A NETBOOK?

The term, “laptops”, came on the scene in early 1990 as the earlier portable computers were all “suitcase” style machines, both bulky and were quite heavy. As laptop computers became widely available and started to reduce in size during the decade, the term “notebook” computer appeared. Today, the two terms are used interchangeably and could be used either way. However, most modern “laptops” cannot actually be used on the top of one’s lap as the main cooling air fan inlet is on the bottom of the computer.

A netbook is a new type of laptop computer, defined by price, size, power, and operating system. They are small, inexpensive and low-powered laptops that use non-traditional operating systems. A high end netbook typically retails for less than US$500, has a screen size less than 10 inches, weight under 3 pounds, with keyboards sized from 80 to 95 percent of normal. They have between 512MB and 2GB of RAM, and 10GB to 160 GB storage. While some netbooks have spinning platter or standard hard disks, others come with solid-state disks (SSD). To keep the size of the footprint and the cost down, netbooks have no optical drives such as CD or DVD. Netbooks currently come only with either Windows XP Home edition or Linux. They will not run on Microsoft’s XP Professional, Microsoft Vista, or the Apple’s OS X (Caulfield, 2009). Some advanced users have been able to load Windows 7 release candidate on their machines, but this is not standard.

Despite a huge proliferation and diversification of models, a netbook typically carries the following capabilities and limitations:

- Screen resolution 1024x600;
- Intel Atom CPU running at 1.6-GHz;
- Wi-Fi, and no Bluetooth;
- Ethernet at 100Mbps, and not gigabit Ethernet;
- A slot for a flash RAM memory card;
- External VGA output jack;
- Integrated graphics;
- Two or three USB ports;
- Built-in camera;
- Headphone and microphone jacks; and
- 3 to 6 cells batteries that can run up to 3 to 6 hours, respectively.

Regardless of the limitations imposed, shipment volume has evidenced demand for such a
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