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Introduction

There is much excitement generated by this thing called the Internet. Using computers and telecommunications enhances communication skills, encourages children to express ideas, motivates children to move forward in learning, and opens new worlds to explore. When children are excited about learning, great things happen. Educators and parents note profound changes in attitude and achievement. When children discover the many worlds online and the speed at which they can be part of these worlds, they are intrigued and eager to jump into action.

On the information superhighway there are resources that integrate the speeding visual culture our children are used to with traditional academic learning. These resources can bring busy families together and encourage participation. They invite exploration and adventure. They are educational, and they are fun!

This book is not so much an instructional manual but more a guide for educators to use to journey with students across the globe at the touch of a button. This book will provide an in-depth look at the rationale for the use of technology, specifically the Internet. It will describe steps for implementing a telecommunications program in the classroom with specific examples along the way. The journey through cyberspace is an exciting one. Enjoy!

Coming to Terms

What is the Internet?

It is difficult to define the Internet in a few sentences. Technically, the Internet is a global network made up of millions of interconnected computers. It is a spider-like system of millions of computer networks. What makes the Internet so incredibly powerful is that these computers store an extraordinary amount of information which is accessible from any computer connected to the Internet. This information is different from that stored in print media in a couple of ways. First of all, the information is stored, transmitted, and received digitally, which means that it can be accessed in a number of different forms, including text, video, and audio. Secondly, the Internet is interactive, which means that the information you receive is a result of the selections you make.

With the Internet, the possibilities are endless—school children in Japan can talk to their new friends in Ireland. Teachers and administrators can have a conference with other colleagues thousands of miles away. A professor on a business trip can access the computer in her home or office and then dispatch many messages with a few simple clicks. And these are just the beginnings. With the Internet, the only limits are the ones you set. Educators have a responsibility to students to teach them about the Internet. Doing so can change your perspective on global teaching.

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Where Did It Come From?

The United States military laid the foundation for the Information Superhighway in the late 1960s as a global, fail-safe communications network designed to continue to function even if one or more links became inoperative. Universities and research laboratories were granted Internet access when they began to do more business with the government. Funded mostly by government money, the Internet was used exclusively by the government, research institutions, and colleges and universities for twenty years.

In early 1992, policies regulating the commercial use of the Internet were relaxed, allowing unrestricted use for commercial purposes. As a result, commercial traffic on the Internet is growing rapidly.

It is safe to estimate that as many as 50 million people use the Internet on a regular basis.

The operating philosophy of the Internet is that of a free sharing of information. Most of the universities, libraries, schools, government agencies, and even most businesses which are online allow users access to their information at no cost. No one owns the Internet—the costs of operations are shared jointly by its users, educational organisations, government research agencies, the military, and commercial organisations.

What Is the Web?

The World Wide Web (WWW) is not the same thing as the Internet. The World Wide Web is an interactive, graphical presentation of information on the Internet. The Web is part of the Internet—the most widely used and the most accessible part of the Internet. The good news is that due to the ease of use, one does not have to be a computer guru to use the resources available on the Web. Young children can use the Web with just a few simple instructions.

Cyberspace

Cyberspace is the place where people and computer meet. It is not a physical location that you can touch or visit. It is another dimension, but reachable and at your fingertips with your computer. The word 'cyberspace' was originally used by science-fiction writer William Gibson and has since become part of our everyday language.

You can't touch the Internet, and this intangibility confuses many beginning users. The Internet is about *how* resources are linked and *what* resources are available.

How Big Is the Internet?

It is very difficult to measure the number of computers on the Internet because so many computers are connected to networks that are connected to the Internet. It is safe to estimate that as many as 50 million

people use the Internet on a regular basis. If the number of people signing onto the Internet continued to grow at its current rate, every person on the planet would be on the Internet by the year 2003!

Nobody knows for sure how big the Internet is or how many networks are actually linked, but there are sites on every continent, including Antarctica. New user sites are continually being added. The Internet has grown at an exponential rate since its beginning. It is the largest network of computers in the world and is growing at about ten percent each month.

There are millions of computers that provide data on the Net, and that number seems to be changing hourly. Colleges and universities, research organisations, government entities, and businesses are all rushing to find ways to connect to and sometimes exploit Internet resources. Schools are no exception. Schools are not only consuming information, they are producing it.

How Does the Internet Work?

The Web has a hypermedia system. This means that a click on any link may take you to another related source in the form of sound, graphic, or text file. The first universal interface is the World Wide Web. The Web makes it unnecessary to think about where the things you want are located. You do not need to know that the file you want is located on a server in Amsterdam, or the path to the director where it resides. Geographic regions and intellectual spheres disappear, giving the illusion that a library of knowledge is at your fingertips by way of your keyboard and the click of your mouse.

To view information at a Web site, both a Web browser and a URL (Universal Resource Locator) are needed. A Web browser is software that displays the graphics and text of a specified site. The URL is a special kind of address that tells the Web browser what site to go to. For example, to access today's news at *CNN*, we need to know the address:

http://www.cnn.com

The first part of the address, *http*, is the protocol which is used to transfer data over the Internet. The *http* protocol stands for HyperText Transfer Protocol. The two slashes following the colon indicate that what follows is an Internet address, in this case *www.cnn.com*. The *www* indicates that the address is on the World Wide Web, *cnn* is the host name, and *com* is a domain identifier that indicates a commercial organisation. Note that URL addresses do not contain spaces.

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The Internet is not seen as a passive tool which simply delivers information but rather as a dynamic, participatory medium which promotes a unique style of learning that emphasises resources, relationships, and exploration.

Most Web sites are divided into Web pages with one page designated as the home page. The home page, which may be thought of as a table of contents for that site, often contains links to other pages at that site and can contain links to other Web sites. These links, called *hyperlinks*, appear as underlined or coloured words or as a special graphic on the page. Clicking on a hyperlink displays a different Web page or part of the current page if it is a long one. The newly displayed page can also contain hyperlinks. Clicking on hyperlinks to go from Web site to Web site is called *surfing* the Web. For example, at the *Melbourne Sidewalk* site, clicking on the entertainment hyperlink takes us from the home page to a page containing movie reviews. From the movie reviews we could click on a hyperlink that takes us to the Web site of the movie studio producing our selected movie. You may even be able to go to a site which lists showtimes at cinemas in your area. And if you aren't sure where the cinema is located, you can find on the Internet a map with directions from your home to the cinema.

You can follow hypertext links between Web pages according to your whim or according to your research needs. Because many links are not always straightforward and you may not be sure where that link will lead, there is a great possibility for getting lost in the Web. There are no rules that prevent people who create Web pages from making whatever links they want.

Finding the sites of most interest to you will take a little time and probably a lot of browsing.

The Growth of the Web in Schools

Seldom have we seen the depth and breadth of infatuation with information technology since the advent of the World Wide Web. A veritable frenzy of interest and action on the Web has caused an explosive growth of Web servers around the world, including education sites. Given current trends in local, state, and federal initiatives to 'wire' our nation's schools, we can only expect this trend to accelerate.

Unlike so many previous educational innovations and fads promoted by educational experts, regular classroom teachers who have tested these waters have become convinced that the Web is one of those rare technologies that will have a transformational impact on learning both in and out of school. The Internet is not seen as a passive tool which simply delivers information but rather as a dynamic, participatory medium which promotes a unique style of learning that emphasises resources, relationships, and exploration.