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## Chapter V

# Integrating Technology Literacy and Information Literacy

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## Abstract

*Information technology literacy can be seen as an integration of what are commonly two separate literacies—technology literacy and information literacy. This chapter defines them, reviews issues related to both, and argues that both must be acquired and functionally utilized for students and workers to achieve success in our heavily technology-oriented society and workplace. The authors address learning outcomes and design components that should be considered in training and instructional settings, and give examples of instructional strategies for achieving them.*

# Introduction

To succeed in today's higher education and workforce environments, one cannot rely solely on either technological or information literacy skills. The two are complementary, and they must be interlocked to provide a complete inventory of needed skills and knowledge. In some places the phrase "information technology literacy" is used to address both; here they are addressed separately before describing why they are complementary. Integrating and utilizing standards and competencies for both through an instructional systems design (ISD) approach strengthens curriculum and program development in the digital age. Building skills upon skills allows for continued proficiency acquisition and adaptation to changing environments, and infuses the concept of continued lifelong learning.

The need for technology skills and knowledge in schools, the workforce, and society is an obvious extension and consequence of living in the digital environment of what Alvin Toffler coined as "the Information Age." Computers and computing have become a way of life and the primary means for doing work in today's world. Governments, schools, and business have attempted to address issues in acquiring specific technical skills for some time. Often missing from discussions about technology literacy is technology's interdependent relationship with information. There is a reason, after all, why it is not called the Technology Age—technology is tools or the use of tools, but it is the result of using them that is important. Computers have not only made creating, acquiring, tracking, storing, retrieving, and analyzing data and information easier; they have made it more accessible than their original creators could have ever imagined. The skill sets needed at the very center of this vortex where technology interfaces with information are both technology literacy and information literacy.

# Background

Traditionally, technology skills have been thought to be the responsibility of employers. Duemestre (1999) argues that while arts and technology should be balanced in education, the latter is more likely best addressed by employers in a work setting. However, the Deputy Director of the National Science Foundation noted in his October 24, 2002, address to participants of the Advanced Technology Education program that this was a challenge—the skills students need for the workplace is an issue that should be reviewed in the context of the traditional college curriculum. Bordogna (2002) avers that technical skills are increasingly the purview of community colleges. Others have suggested that in particular, information technology skills should be incorporated into a minor as part of college programs (Bailey & Stefaniak, 1999).

Early on, information literacy was taught primarily in undergraduate environments, where the need for honing research skills was seen to be the greatest. Information literacy, as it is now known, began in the '70s when computers were first used in publishing, and the amount of information began to grow. In the '80s, computers began to be used as tools