Chapter III
Technological Literacy, Perspectives, Standards, and Skills in the USA

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ABSTRACT

This chapter is written to provide a framework for understanding perspectives on technology literacy and how it might be taught in the K-12 setting. Numerous U.S. governmental reports, initiatives, definitions, and professional standards are reviewed. Though there are many fields interested in technological literacy, the argument is made that technology educators may prove to be an excellent resource in meeting the challenge of creating a technologically literate citizenry. A case study of exemplary practice is introduced as a point of investigating how one technology teacher is being successful in teaching technological literacy. It is up to the reader and all those concerned with technological literacy to continue to evaluate and search for best teaching practices for teaching technological literacy in K-12 schools.

INTRODUCTION

Throughout the history of civilization, technology has been an enabling factor in societal change. From a hunter/gatherer to an agrarian-based to an industrial-driven culture, technology advancement has played an essential role (Wright, 1995). Currently our world appears to have moved out of the industrial period into what many are calling the Information Age, where the incredible growth and worldwide acceptance of information and communications technologies seems to be the icon of our era. Though some may argue that the changes

society face now are no more significant than those faced in the past, others would suggest that society is facing unprecedented rates of change (Cohen, DeLong, & Zysman, 2000). Of particular concern to this book is the effect these changes are having on the nature of literacy and its relation to technology. This chapter will review numerous perspectives and publications on this topic in an attempt to help the reader formulate an idea of what technological literacy is and to begin thinking about how education in grades K-12 might respond to these changes.

A CHANGING CONTEXT

Innovations in information technology have become so influential in the U.S. that the Under Secretary of Commerce of the United States claimed "the digital economy and digital society are no longer 'emerging.' They are here" (U.S. Department of Commerce, 2000). As the digital economy and the information age continue to grow, individuals, governments, businesses, and organizations are being forced to consider new strategies and guiding principles that focus on knowledge and information to be successful (Drucker, 1992). New ways of thinking about knowledge have also emerged, including a broader acceptance of multiple intelligences (Gardner, 1999) and emotional intelligences (Goleman, 1995) as important elements of an educated workforce. Increasingly, corporations are realizing that in order to adjust and excel in this global economy, a new focus must be directed toward human capital and lifelong learning.

Advances in technologies are not only impacting our economy and business, but they are changing the social fabric of our homes and our schools. Today, more than half of all Americans are using the Internet and more than 65%

of the U.S. population uses computers (U.S. Department of Commerce, 2003). It is not uncommon for people to manage investments, make purchases, pay bills, communicate with family and friends, and research services and products online. These are things that would be unheard of 25 years ago because personal computers were not prevalent then.

Though there has been amazing growth in access to technology globally, there is still a serious concern over the digital divide. This gap however is progressively shrinking. In Colombia, for instance, the scientific and technological developments have gained such strength and presence that it can be called a "technological culture," for which the educational system must prepare citizens, making them conscious of its existence and preparing them to approach it (Pena, 1992). Other significant changes in Central and Eastern Europe, including the fall of communist governments, has likewise caused change, need, and opportunity for educating a technologically literate citizenry.

The technological boom our world has been experiencing could be considered in many ways a societal revolution. Such a technological revolution is surely not the first, nor will it be the last. During the Industrial Revolution, John Dewey described the need for schools to keep current with the changing social impacts of a changing and technologically advancing society. "It is radical conditions which have changed, and only equally radical changes in education suffices" (1956, p. 12). If Dewey felt that the changes of his time were so radical and rapid that they required equally radical and rapid changes in the classroom, what should our schools be doing to adapt to the changing nature of our society today? How will technology affect our future? How should we be educating out children differently than we did 5, 10, or 50 years ago?

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