Chapter IV
Globalization, At-Risk Students, and the Reconceptualization of Technological Literacy

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ABSTRACT

The problem of technology has, since 1970, been radically altered by the global spread of market economies and networked computers. As a result, the notion of technological literacy education that emerged in the 1970s and 1980s must be re-constructed. After reviewing the impact of globalization and the spread of communications networks on the world occupational structure, and the consequent new risks borne by low-tier routine and informal workers, I offer a revision of the concept of technological literacy education that assigns important new roles to non-governmental organizations serving low-tier workers, and that places the hands-on use of networked computers at its core.

INTRODUCTION

In this chapter, I explain in general terms the relationship between globalization, at-risk metropolitan youth, and technological literacy education. I argue that the notion of technological literacy education that emerged in the 1970s and 1980s for middle- and secondary-level education in the developed nations must be reshaped for use in the educational agencies of both developed and developing nations, to take account of changes in the global economy, the rapid urbanization of the developing world, and the migrations of workers from the developing to the developed world. In the first section, I consider the impact of globalization on the emerging world occupational structure, the worldwide movement of jobs and workers, and the risks borne by low-tier routine and informal workers lacking higher order workplace skills.

I then explain why this new situation compels us to reshape earlier notions of technological literacy education, especially for at-risk adolescent learners, and offer some suggestions for revision that assign central roles to links with non-governmental organizations, and hands-on use of networked computers.

GLOBALIZATION

Economic and Technological Globalization

The current stage of *economic* globalization began after World War II, when the economies of Europe and Asia were shattered by the war, and the United States had surplus capital for investment. The world economy was in a state of chronic under-supply, and American firms faced little competition in international trade. They increased their direct foreign investments, creating foreign subsidiaries throughout the world making mass-produced products for global markets. Under these noncompetitive conditions, American firms could set world prices for mass-produced goods and could secure labor cooperation by passing along some part of their excess profits to unionized industrial workers as wages and benefits above world levels.

But by the 1970s European and Asian economies had recovered sufficiently to compete with American firms on a global scale.[1] American firms responded to this competition during the 1970s and 1980s by initiating aggressive antiunion practices, by shifting low-skilled production jobs to nonunion plants in the South or overseas to reduce wages, and by greatly expanding low-wage service sector industries.[2] Western European and Japanese firms also began outsourcing routine jobs to low-wage nations in their regions and beyond. Notions of technological literacy emerging at that time, however, did not pay close attention to those trends.

The globalization of *digital information technology networks* began in the early 1990s. The growth of these networks was accelerated by the need to coordinate the far-flung production and marketing activities of large multinational firms. The first commercial Internet service provider opened for business in 1990, and the World Wide Web was introduced at CERN in 1991. In 1992 the World Bank went online, followed by the White House and United Nations in 1993 (Howe, 2001). Commercial use of the World Wide Web grew rapidly by the mid-1990s.[3]

The driving forces of the growth of digital networks included the rapid technical advances and price declines in computer chips, satellites, and fiber optic cables which facilitated growth in television, telephony, fax, and the Internet, turning the global information grid into a seamlessly integrated resource, "the biggest machine ever made" (Dizard, 1997, p. 1). By the end of 2001 the Internet was growing in the United States at the rate of two million users a month; 143 million Americans were online (54% of the population), an increase of 26 million in 13 months. Schools and colleges also went online, and 75% of 14- to 17-year-olds and 65 % of 10- to 13-year-olds were Internet users by 2002 (NTLA, 2002).

Economic and Technical Convergence: Network Enterprise

The convergence of these economic and technological developments enabled a reorganization of trans-national enterprises: large, vertically organized firms with foreign subsidiaries have been transformed into global 'networks' of downsized flagship firms, small supplier firms, competitor firms, government agencies, and universities in strategic alliances.[4]