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Chapter II

Human Capital and Information Technology in Education in the New Millennium

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Local technological applications and their implications for human welfare depend not only on the most proximal environment, but also upon successively larger embedded social structures. In a world with a complex international division of labor, events in distant countries now intimately affect our nation, just as the states and cities where we live shape the social institutions in which we work, which in turn determine our daily quality of life. The national output, our indebtedness as a nation, the shift from federal to local responsibilities, over-bureaucratization, and the fast-paced technology of the mega-institutions where our livelihoods are made essentially impact the quality of our lives. We elaborate these themes in ensuing pages, working from the most macroscopic or global level to the most microscopic, or local, level of social organization. We tie our discussion to data on international, national, and state-level trends, and we explore a single, but representative local case, which documents the impact of these mega-forces on an educational institution.

WORLD-SYSTEM PROCESSES

World-system arguments (e.g., Wallerstein, 1974; Chirot, 1977) offer an appropriate point of departure for global interpretations of national, state, and local events in the United States. World-system theorists identify a capitalist world economy where production is undertaken for sale in a global market, in which the object is to realize the maximum profit. Economic actors in the world system consequently attempt to establish control over vital world resources, and minimize the uncertainties caused by changing market conditions. And, since geopolitical units in the world economy are organizations with considerable power, economic actors support the state in order to secure privileged access to resources and protection from the risks of the market. As an historical result of these and related dynamics, Western nations, with their strong states, technical and economic wherewithal, and human capital resources, have dominated the international economy for centuries.

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World-system theorists reveal that a "capitalist world economy" actually emerged in the middle 1400s, with the economic ascendancy of Spain and Portugal. Among other things, both nations engaged in widespread international trade, and they developed formidable navies to protect the commodity exchanges they made in far distant areas. Around the early 1600s, however, the Netherlands, England, and France also entered international markets in significant ways. In fact, due to their better technology and stronger capitalist orientations, these nations were more successful in the world economy, and replaced Spain and Portugal as the "core" global economic and military powers of the time. Their ascendancy was, of course, presaged by the defeat of the Spanish Armada in 1588. England eventually outdistanced France and the Netherlands due in large part to its superb technology, again a consequence of the mobilization of human talent, and due to its consequent economic and military advantages. We return to the primacy of technology and human capital in the contemporary world system later in our argumentation.

The on-going success of the "core" countries in the seventeenth, eighteenth, and nineteenth centuries visibly shows the simple principles of successful capitalism. A nation's international control is buttressed by the strength and success of its internal economic actors, its investors and producers, and their command of human and technical capital. Control over preferable (i.e., "economical") exchanges in the world market place in turn helps ensure international well-being.

Clearly this understanding led to the establishment, across four centuries, of formal colonies in the "periphery" of the world-system. Colonies provided precisely what core nations needed for their own welfare — inexpensive raw material resources and labor, including enslaved labor, for the "mother country." Due to their human-driven technological supremacy, core countries were particularly adept at converting these raw materials (e.g., wool) to finished products (e.g., clothing). They sold them on the international market, and in so doing gained huge profits as well as a continuing economic advantage over poorer countries ("periphery") and middle-income countries (the "semiperiphery"). During the late 1800s and early 1900s, Germany, Switzerland, Belgium, and the United States entered this select group of countries, as they became world superpowers.

Unfortunately, however, the world was becoming crowded with global powers, all of whom saw plainly that their welfare depended intimately on controlling world markets, if necessary through military means. It was at minimum, the *fear* of unlimited contention over global resources that led these countries and their semiperipheral allies (e.g., Japan, Italy) to engage in the first of the two global wars.

World War I was only apparently conclusive. The structure and process of the world system remained intact, and it took only one generation for the same logic and the same result to unfold. Yet, it was human inventiveness and resultant technology again that literally brought World War II to a close. The technology was and is extraordinarily lethal and helped establish the hegemonic status of the U.S.

Power relationships in the world-system of today are essentially still reflected in a three-tiered, global hierarchy composed of core, semiperiphery, and periphery nations, which are more than ever linked by an international division of labor. The former colonies have been replaced for the most part by sovereign nations, but the same generic economic relationships remain. Core societies such as the U.S., Western Europe and Japan are economically diversified and wealthy and still control the international market in conversion of raw materials into finished product exports. Peripheral areas, such as much of Africa