Chapter 16
Entrepreneurship, Information Technologies, and Educational-Based Virtuous Circles in Post-Industrialized Economies

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ABSTRACT
Information Technologies are transforming traditional educational models based on new communication skills. Using a comparative analysis, the scope of this work is two-fold: (1) to study the importance of entrepreneurship and R&D in tertiary education and (2) to analyze which conditions must change in order to contribute to adopt this new IT-based model by the more traditional countries or university institutions that do not research, arguing they are focused on short-term goals only. Using a single OLS econometric model, the author demonstrates that R&D in companies and universities, both public and private, are complementary, R&D applied in education guarantees future positive externalities and creates IT educational societies, while globalization favors capital and human resources mobility, not only nationally but also internationally.

INTRODUCTION
Learning technologies play a strategic role in the achievement of a competitive advance through knowledge-based resources. Educated entrepreneurs can foster economic growth, while increasing quality of living and achieving first-order competitive advantages. In this sense, Tertiary Education has a key role to play for accomplishing economic and social development through Educational-Based Virtuous Cycles (EVC). These EVCs can be originally defined, conceived and implemented using values and techniques designed and properly internalized by individuals, as the educational level is increased. In this sense, universities and research centers have an important role to play.
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Information Technologies (IT) are transforming traditional educational models. New educational patterns are characterized by information enrichment, as well as new communication skills. Consequently, learning is more interactive and knowledge is fostered by the interplay of computerization, foreign languages’ skills, technical expertise, and specialized knowledge. This situation, however, is reversed in countries where traditional models are used. This fact is creating a new dual IT educational society, formed by the richest countries in the world, characterized by being postindustrial and highly-technological, and relative poorer ones defined by pre-industrialized societies.

Using a comparative analysis, the scope of this work is two-fold: (1) to study the importance of entrepreneurship and R&D in tertiary education and (2) to analyze which conditions must change in order to contribute to adopt this new IT-based model by the more traditional countries or university institutions that do not research arguing they are focused on short-term goals only.

In this chapter, a general model is presented and analyzed, linking the importance of R&D investment while designing educational patterns. Can we speak about a global educational model that can be “translated” and applied into every educational system in the world?. Does R&D play a fundamental role?. The analysis demonstrates that new educational patterns are characterized by information enrichment, as well as new IT-based communication skills. Consequently, learning is getting more interactive, and knowledge is fostered by the interaction of computerization, foreign languages’ skills, technical expertise, and specialized knowledge. Higher standard of living, communication skills, IT development and higher education levels constitute the so-called Postindustrial Technological Cyber Societies, in contrast with the traditional model primarily defined by tradition (Saiz-Álvarez, Lombardo, & Joyanes, 2002). As a result, opposing modernization to tradition is one way for societies to evolve.

Does “translation” assist in understanding attempts to transfer cultural and educational patterns from one society to another? IT and Internet are transforming societies as world is increasingly being globalized. This situation, however, is different for developing countries where this process must be fulfilled taken into account traditions and key cultural concepts to preserve social and national identities. Pros and cons are inherent in this practice. In some situations, pure “translation” is not possible. Only this may happens in the most remote and isolated regions or institutions where local populations or managers are not prepared to be in fruitful contact with other cultures or ideas. In this sense, education has an important role to play to achieve GDP growth.

CULTURE, SCHOOLING, AND IT

High competition among corporations in a global economy context is changing labor markets worldwide. Brand new technologies diminish time and efforts to produce and to augment efficiency patterns. In order to be correctly implemented a constant study is needed, so education is necessary to permit new knowledge to be absorbed by individuals. As a result, lack of education can increase the existing gap in our societies among well-educated workers (who can be specialized) and scarcely or not-educated ones. No capital formation finishes in creating social problems in the long term, as it is currently seen in Third World societies.

As a result, a constant up-to-date capital formation is necessary to foster higher productivity. Learning-by-doing techniques permit companies to maintain a privilege position in the sector they
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