


Chapter 84

The Development of the Management Competences at the Postgraduate Level in the Context of the Fourth Industrial Revolution

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ABSTRACT

The objective of the chapter is to describe the main managerial competences to be formed at the graduate level, according to the characteristics established in the context of the fourth industrial revolution. From this perspective, individual knowledge, experience, initiative, and creativity are recognized as the unlimited resource of organizations and countries, so that the talent of the people is the basis of the competitiveness and survival of the organizations of any type that require a manager. Five axes of training at the graduate level are identified: personal competences, strategic competences, intra-personal competencies, personal efficacy competencies, and investigative competences.

INTRODUCTION

The Fourth Industrial Revolution is characterized by the establishment of a social, cultural and economic transformation from the generalization of the use of artificial intelligence and its application in robotics, which impacts the industrialization processes and the economy, society and politics, which implies a change in human and organizational relationships (Velásquez, 2019).

In the World Economic Forum (WEF, 2017), several disruptive technological changes that are transforming social relationships between humans and objects were identified. Thus, there has been the widespread use of the Internet, the absolute use of mobile devices both at a personal and organizational

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level, the population census through big data, the collection of taxes through blockchain, as well as incorporating artificial intelligence into the board meetings. This context has been named the Fourth Industrial Revolution, which is characterized by the use of new exponential technologies such as advanced robotics, autonomous transport, artificial intelligence, data collection sensors, the Internet of objects, 3D printing manufacturing, nanotechnology or quantum computing (Coleman, 2017).

Given the previous challenges of the Fourth Industrial Revolution, Frey and Osborne (2017) established that the countries' education system faces the following challenges:

In the first place, the incorporation of the technological impact in the formative path of the professionals that are required for this new context, therefore the incorporation of new curricular designs and relevant training programs that respond to these new economic, social and cultural needs is required.

Secondly, it is necessary to analyze the impact of this transformation on the academic management of organizations in order to formulate proposals that allow innovating both teaching and learning methodologies as well as the professional performance of graduates.

And thirdly, to promote the generation of new knowledge in a framework of social innovation in order to exercise a prospective vision of this transformation based on both positive and negative results that are presented.

In this way, Higher Education Institutions (HEIs) face the need to generate and implement educational programs that impact on the social and economic development of the countries, and which in turn meet the criteria of relevance, innovation and quality. As Marcovitch (2002) mentions: Faced with the technological revolution, HEIs behave like any other organization that cannot ignore and stop taking advantage of its benefits.

Thus, HEIs continue to play a fundamental role in the training of professionals, high-level specialists, scientists and researchers that the country demands. In this context, a priority is to ensure that they are functioning at the forefront of intellectual and scientific development (Mercado, Cernas and Nava, 2016).

Specifically, the postgraduate level is assuming a fundamental role in the formation of highly trained human talent that requires not only the productive field but also the scientific and technological one (Reyes, 2018).

In this sense, a fundamental challenge of any country is to ensure that all its citizens have the right skills for an increasingly digitalized and globalized world that allows promoting both inclusive labor markets and stimulating innovation, productivity and growth. Particularly, skills are needed: technical and professional skills, use of ICT for workers who manage digital infrastructure and the functioning of the digital ecosystem; Soft skills such as leadership, communication and teamwork, required for the increasing number of opportunities for ICT-mediated collaborative work (OECD, 2015; OECD, 2016a; Grundke, Squicciarini, Jamet and Kalamova, 2017).

To achieve this, educational systems are required to focus on an anticipating training of changing needs in skills to adapt the programs they offer to guide students towards options that lead to good results. In this way, it is not enough for workers to have the necessary skills for the digital economy, but employers must fully use these skills to propitiate their benefits in terms of higher productivity and greater competitiveness (OECD, 2016b).

Also, it is necessary to encourage the use of high performance work practices such as teamwork, work autonomy; flexible training that allows promoting better organization and management of work within companies and throughout the economy, as well as fostering the necessary skills to consolidate the organization (OECD, 2016c).

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