

SCIENCE IN THE KNOWLEDGE SOCIETY

Science is the knowledge generated on the basis that the world around us operates according to certain regular patterns, which can be typified by theories, principles and laws. Such theories, principles and/or laws prevail as long as they do not contradict empirical evidence. In this respect, it should be considered that Einstein's relativity theory replaced Newtonian classical mechanics as it explained the phenomena of the real world in a better manner. This is an example that reveals that science generates laws and sustains itself on paradigms that are essentially tentative, since they can be distorted and therefore modified, improved or surpassed after new laws or new dominating paradigms.

The goal of science consists in understanding, from observable phenomena, the logics behind the functions of nature. Thus, the scientific method is the most powerful tool that man has developed to generate new knowledge, as its correct application leads to the enunciation of laws whose validity is subjected to a permanent and systematic scrutiny.

However, we live in a society that is the result of the institutionalization and progress of science and, as such, it is in a permanent construction phase. It is the knowledge society, where the main source of the competitive advantages of nations, organizations and persons is precisely in knowledge. This has always been a production factor, but nowadays the capacity to handle, store and transmit large amounts of information at low cost is a central element in organization and society processes. Knowledge flows in a global and instantaneous fashion with more strength than ever.

Societies require of people with a continuous education, adaptation capacity, good labor practices and new models of interaction within organizations. Therefore, the amount of knowledge needed to function with social efficacy is very large, thus also requiring prolonged schooling.

The central axis of the present society is in the revolution experimented by the information technologies, whose main object is the buildup of knowledge to generate

permanent innovation cycles and improvement in the different sectors of society.

The knowledge society is the expression of science and technology. Science, through multiple discoveries, has permitted to progressively build a new reality, since society is a dynamic entity and people evolve not only according to the natural laws; science and technology have an impact on the quality of life and the expectations of human beings. Science, then, identifies the regularities and laws of nature and impacts upon the extent and ways of life of mankind.

In the context of the knowledge society there is progress towards a process of technological convergence in which knowledge and methodologies arising from different fields are gathered. The efforts carried out culminate in the interdisciplinary study of the interactions among living beings and artificial systems for the design of new gadgets that allow to expand or improve cognitive and communication capacities, health and the physical abilities of people and, in general, the production of a larger social wellbeing. An example of technological convergence is given by nanotechnology, where potential applications outstand in the design of biosensors for the control of diabetes, the monitoring of blood oxygen, protein and cancer detection, control of fluids at a nanometric scale and the evaluation of changes in thermodynamic properties, drug development and applications in the fields of food and agriculture.

The point to emphasize is that the knowledge society can be conceived as a result of science and technology. But in this new society, currently under construction, it is science itself that has a fundamental role, not only to study the regularities to be typified by laws or paradigms, but it also has more than ever before the possibility to build future, impacting, as it never did in the past, people and society as a whole.

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