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Organizational Learning As A Mechanism Of Artificial Intelligence In The Generation Of Sustainability

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ABSTRACT
Globalization and the expansion of technologies have resulted in an era of rapid change that forces all organizations to constantly seek solutions to stay current. For this reason, and with the aim of exploring the contributions that artificial intelligence can generate for organizations, the most relevant aspects that resulted from the construction of a bibliographic review of research in the area, a consultation framework for all types of companies, are reviewed below. The selected material was designed to provide a user-friendly guide, especially for students and entrepreneurs who are new to artificial intelligence and data mining.

Keywords: Artificial Intelligence, Knowledge Management, Organizations, Competitiveness, Globalization.

1. INTRODUCTION

The dynamic that has impregnated the business world with globalization has led to the constant search for alternatives to manage knowledge and, from that point on, to find new solutions that will allow us to lead the markets. This being the case, artificial intelligence and its benefits are opening the way in organizations of all sizes, since it responds to a great extent with alternatives to promote differentiating changes that contribute to the positioning of today's companies [1].

Artificial intelligence was defined since 1956 by John McCarthy as a science that seeks the intelligence of machines at the intersection of the natural and social sciences [2]; it is the study that makes some computers simulate processes of human thought and intelligent behavior at a higher level, with the fundamental objective of exploring how to imitate and execute some functions of the human brain, so that people can develop products of technology and establish relevant theories [3]; innovations in this area offer the ability to add to computers, consciousness, sensitivity and rationality [4]. It is a very broad science, spanning many areas, including philosophy, cognitive science, mathematics, neurophysiology, psychology, computer science, information theory, cybernetics, and others [5].

2. METHODOLOGY

This article addresses a qualitative approach, using documentary research as a method for the selection, compilation and analysis of the bibliographic sources that support the research problem. This design is based on the exploration of theories to observe new guidelines that will enrich or complement the established theoretical models through the investigation of diverse documentary supports [6]. This method facilitates the critical interpretation of the theoretical approaches proposed by the authors to create, in their own reflection, a particular approach that strengthens, from the theoretical point of view, current ideas and models. As a result, techniques were used to capture, compile, analyze and interpret academic documents recently published in the main databases (Scielo, Scopus, Ebsco, Proquest, Springer, among others) in both English and Spanish, prioritizing the most recent references.

2.1 Main uses and advantages of artificial intelligence

Through an algorithm, computers can simulate human activities and behavior by simulating instructions issued by traditional disciplines to solve the problem, so that the use of artificial intelligence techniques contributes to reduce labor costs, reducing human labor, improving efficiency, and achieving a level of development in the productive forces [5], some of which are represented in Figure 1.

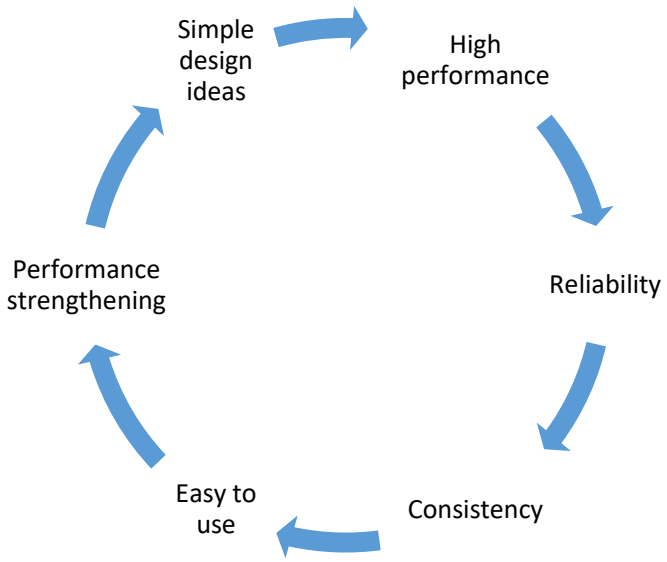

Figure 1. Advantages of using artificial intelligence

In the current discussion, there are no less than three senses of artificial intelligence involved [6]:

- A computing system that performs like a human mind
- A computer system that figures out distinct problems previously solved only by the human mind
- A computer system with the same cognitive functions as the human mind

The center standards of Artificial Intelligence incorporate attributes like thinking, information, arranging, learning, correspondence, insight, and the capacity to move and

control objects; it is the science and designing of making shrewd machines, particularly canny computer programs [7]. Shi [8] has the characteristics shown in Figure 2.

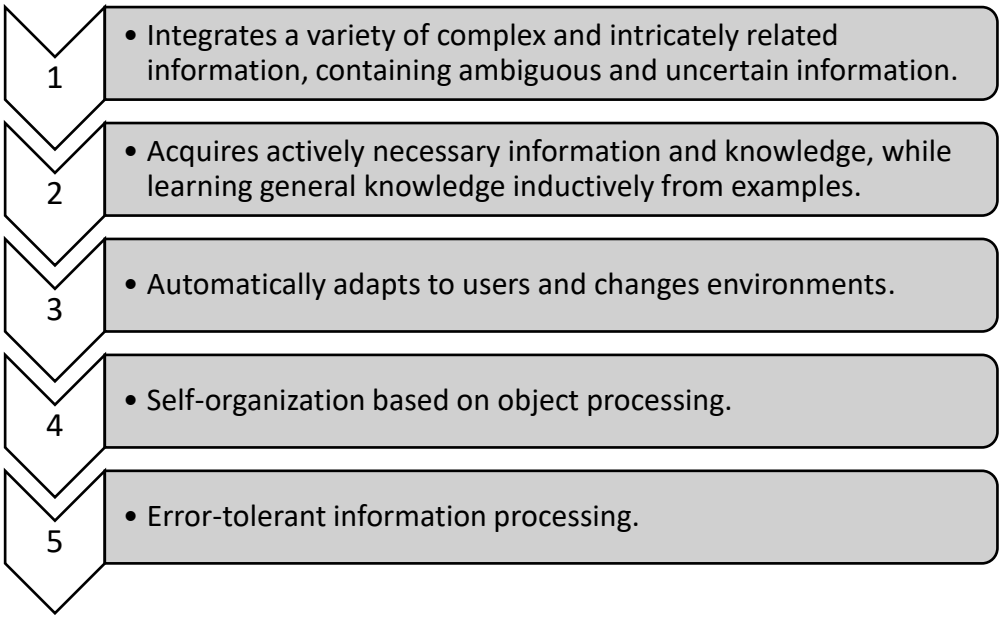

Figure 2. Characteristics of Artificial Intelligence

Artificial intelligence (AI) as well as the neural network (NN) has gotten more importance in the field of forecasting due to its ability to deal with a complex problem, resulting in a reliable, cost-effective, and user-friendly forecasting technique [9]. Artificial neural network models can eliminate the need for costly experimental research in various areas of manufacturing processes; an understanding of the interrelationships between inputs is essential to interpret sensitivity data and optimize design parameters [10]. Kalra and others [7], highlight some of the most recognized applications:

Finance [11]
Medicine [12]
Heavy industry: control, monitoring, fault diagnosis and maintenance, programming, and planning processes
Telecommunications [13]
Music
Antivirus [14]
Robotics [15]
Games
Virtual Reality [16]
Transport [17]
Engineering [18]

2.2 Types of Artificial Intelligence

The artificial intelligence systems are represented in table 1 and are further expanded conceptually below.

Table 1. Types of artificial intelligence

Types	Description
Robotics	To conduct different tasks in various areas, such as military, medical surgery, space missions, and others are used robots. A robot is defined as a "reprogrammable multifunctional manipulator" designed to move specialized materials, parts, tools, or devices through programmed movements for various levels of performance. Today, many robotic matrices are available for industrial, military, medical, domestic, entertainment and toys [19].
Expert Systems	The expert system is a knowledge-based algorithm that emulates the behavior of human experts in terms of thinking and reasoning process; it can be designed as a model of problem-solving ability, involving knowledge, reasoning, conclusion, and similar explanations to the human expert for analyzing and solving complex problems [20]. These systems fulfill various roles as advisors, decision makers, and medical support, suggesting alternative solutions; they are computer-based information systems that possess diverse skills in specific areas of work, so that they provide consistent and very rapid results. An example of this type of system is "Natural Language Processing (NLP)", used to understand human language through computer programs, used in applications such as Siri, Google Now or Alexa [19].
Language translators	Today, information is available worldwide through the Internet, so that people can share their knowledge in their own language, making it available to others using language translators [19].
Computer-aided intelligence instruction (ICAI)	Computer-assisted intelligent instruction systems are widely used to provide various groups of learners with specialized learning materials according to their expectations. These systems are made up of three main elements: Problem Solving Expertise, Student Model, and Tutoring Model, capable of providing presentation and evaluation of student responses. [19].
Game Playing	To simulate human behavior in games, being able to make quick and intelligent decisions are used artificial intelligence systems [19].
Artificial Neural Networks	The concept of Artificial Neural Network (ANN) is inspired by biological neural networks. This is an automatic learning approach that models the human brain and contains artificial neurons, where each receives several inputs and an activation function that generates an output value; the method is particularly useful for solving a problem in which a large amount of data is involved, but with unknown interrelationship [19]. Neural network applications include classification, recognition, identification, forecasting, prediction, and evaluation [19].

Fuzzy Logic	Fuzzy logic is a form of multivariate logic, based on degrees of truth, which can be real numbers between 0 and 1, rather than the usual "true" or "false". Applications of diffuse technologies include household appliances, animation systems, aerospace, industrial automation, transportation, etc. [19].
Genetic algorithms	Genetic algorithms (GA) are a solution search technique, based on the ideas of evolutionary process and natural population genetics [19]; they are considered as a technique for tackling both obliged and unconstrained improvement issues considering a characteristic choice cycle that imitates natural advancement. Evolver, XpertRule Gen Asys are examples of commercial software packages employing Algorithms [19].
Computer vision and scene recognition	Computer vision is a field of man-made brainpower (AI) that empowers computers and frameworks to get significant data from advanced pictures, recordings, and other visual sources of info - and make moves or make proposals considering that data. [19].

Despite the above-mentioned benefits, some problems that deserve attention and that occupy the interest of many analysts and researchers, the most representative are the unemployment in developing countries generated by the automation of processes, morality in relation to ethics in intelligent machines, their autonomy, and technological uniqueness if they reach the level of human intelligence [21].

The foregoing suggests, therefore, that regulatory alternatives be generated where the minimum and maximum aspects of scope for this type of technology are established and where aspects of common interest are reconciled so that progress is considered in accordance with the needs of the environment without ignoring the social aspects that are an inherent part of communities and organizations today.

3. CONCLUSION

Although artificial intelligence became known in the 1950s, it is estimated that in recent decades it has been developing its greatest dynamic. The research reviewed shows how the application of different robotics tools and other similar tools has been successfully inserted in several production fronts, thus benefiting the company in general [22].

For today's organizations, managing new knowledge, automation and the incorporation of new technologies becomes a challenge [23]. On the one hand, they have the possibility of simplifying processes and speeding up productivity [24]. On the other hand, there is a debate about the divided opinions generated by operating processes without the mediation of the individual, considering that ethical aspects are inviolable.

Thus, it is considered that artificial intelligence must be aligned with the needs of the individual and the regulatory frameworks must be adjusted for this purpose [25].

For Colombian companies, the challenge is in its initial stages since the implementation of this type of strategy is currently barely opening the way and it is from innovative and functional proposals that the first advances are being made to forge a panorama of greater participation.

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