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Journal of Ergonomics

Editorial

A Brief Note on the Significance of Ergonomics in Industry 4.0

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DESCRIPTION

Ergonomics is the process of creating or organising workplaces, goods, and systems such that they are comfortable for the people who use them. Most people have heard of ergonomics and believe it is related to sitting or the design of automobile controls and gauges. Ergonomics is used in the design of everything that affects people, including workplaces, sports and recreation, and health and safety. Ergonomics is also called as "human factors". It is one of the emerging areas of research that seeks to learn about human skills and limits and then apply that knowledge to enhance people's interactions with goods, systems, and surroundings. Ergonomics seeks to enhance workplaces and surroundings in order to reduce the risk of damage or harm. As technology evolves, so does the need to ensure that the tools we use for work, relaxation, and pleasure are intended to meet the needs of our bodies. According to recent study, lower back pain is the world's most prevalent work-related ailment, affecting people in offices, construction sites, and, in the highest risk category, agriculture. Ergonomics seeks to create safe, pleasant, and productive workplaces by incorporating human talents and limits, such as body size, strength, skill, speed, sensory capacities, and even attitudes, into the design of a workstation.

Since last decade, there is a vital increase in the usability of human factors and ergonomics applications among the researchers of ergonomics community. The importance of technology in terms of considerable development and enhancement of ergonomic practises in organisations cannot be overstated. Continuous innovation is achieved *via* the use of new production materials and research. Ergonomics has been very helpful in various applications using diverse technologies.

Fayomi et al. [1] has presented an overview of the many improvements in ergonomics principles as the industrial revolution progresses, with supporting roles on the necessity of teaching workers on new inventive approaches. The authors discussed various new technological approaches related to ergonomics such Data Acquisition and Supervisory Control [2], Integrated Engineering System [3], Sensor automation [4], etc. Lee et al. [5] has reviewed the importance of machine learning based approaches in manufacturing ergonomics. The authors have explored several machine learning applications for manufacturing ergonomics research such as motion analysis *via* videos, classification of fatigue etc. The research gaps, upcoming prospects, and prospective problems are then examined by the authors from the viewpoints of machine learning, ergonomics, and manufacturing. They suggested that there is a necessity to perform enhanced research for resolving several problems of manufacturing, computer science, human factors, psychology, operations research, etc. Reiman et al. [6] has made a critical analysis on the ergonomics as well as human factors in manufacturing in the revolution of Industry 4.0. The authors addressed several human, technology, work environment as well as organisational challenges. The authors concluded that the problems that manufacturing businesses confront as they migrate to Industry 4.0 are complex, necessitating dynamic organisational skills that include the whole production process.

From the analysis of literature it is observed that ergonomics related researches with reference to industry 4.0 emerging technologies are very limited. It is noticeable that a maturity paradox, emphasising the importance of focusing on the concurrent growth of technical and ergonomic skills in the industrial setting. Also, there is a rapid possibility of expanding employing ergonomic applications that can convince advanced study directions in the context of viewpoint, and it may be a problem of future research. It cannot be stressed that advancements in ergonomics and its applications will be initiated and developed in the future days to solve complex challenges.

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Received: November 08, 2021; **Accepted**: November 22, 2021; **Published**: November 29, 2021

Citation: Ukarde N (2021) A Brief Note on the Significance of Ergonomics in Industry 4.0. J Ergonomics. S5:e001.

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