Industry 4.0 Conceptual Awareness of University Students:

The Case of Information and Records Management Department Students

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ABSTRACT

In recent years, developments in information and communication technologies, like cloud computing, artificial intelligence, internet of things (IoT), big data, advanced robotics technologies, etc. have revealed the concept of digital transformation. It is not possible for the scientific world to remain irrelevant to the issue of digital transformation, which has such a great impact. When the literature is scanned, it is seen that each discipline examines "digital transformation" from its own perspective. In this study, the awareness of the students studying in the Information and Records Management Department of the university regarding the concepts of industry 4.0 was investigated. In this study, quantitative research methods were used and the data were collected with using the Industry 4.0 Conceptual Awareness Scale. The scale includes 29 concepts that entered these lives within industry 4.0. In the research, it was investigated how well the students had mastered the related concepts. The result shows that the students are not very familiar with the concepts of industry 4.0 yet.

KEYWORDS

digital transformation, Industry 4.0, Information and Records Management Department, university students

INTRODUCTION

Although the story of the term Luddite, which was recorded in the Oxford English Dictionary in 1811, is interesting, it is thought that the effects of the Luddite Movement on the working life of that period created scenarios parallel to the change brought by Industry 4.0 to the working areas. Historian Emma Griffin (2013), summarises Luddite actions and Luddites as follows: Luddite movement began when two automatic looms were brought to Led Nudd's hometown, who was a textile worker rumoured to have lived in the Leicestershire region at the end of the 18th century. When the machines were presented, Nudd dismantled them, fearing that the workers would lose their jobs. The prohibition of labour unions in England in 1800 and the inability of workers to find the necessary support to

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defend themselves and their rights later caused the Ned Ludd protest to be re-experienced in different parts of England. Ludd's action, which spread rapidly among textile businesses in the middle of the industrial revolution in England ignited the rebellion that would spread to various parts of the country, in Nottinghamshire in 1811, then in West Yorkshire and Lancashire, by attacking the automatic, that is, unmanned machines, which the textile workers thought would take their place. These people who carried out the aforementioned acts and were accused of "Machine Destruction" are referred to as Luddites, and the government imposed heavy sanctions, up to the death penalty, in order to stop the Luddite actions. At first glance, the main feature of this movement, which seems to be an action against technology, is based on the fact that unmanned machines would cause workers to become unemployed and lose their income.

Digital transformation, namely Industry 4.0, the foundations of which were laid in the early 2000s, is a process that we still experience today, which continues to develop rapidly. Along with digital transformation, many products and services that are created with human power are now revealed by means of a system and mechanisms that require people at the minimum level. Digital transformation is a complex structure that includes real and virtual systems, informatics, Internet services that are diversified with the Internet of things. This transformation is a process that occurs when the internet, communication, informatics, sensors, automation, artificial intelligence - machine learning, and robotic technologies significantly affect and change almost every field. In the new process of digitalisation in every field, it is rapidly moving towards an environment where virtual and physical systems are integrated with each other, where objects connected to the Internet will become smart, and where the physical world and the virtual world are intertwined (Aksoy, 2017). Today, with Industry 4.0, the rapid changes in social and economic structures have forced the institutional structures and people to adapt to these changes in order to gain competitive power, while also causing them to become anxious about the future, as experienced in the early stages of the Industrial Society. In this context, people and institutions need to develop some strategies not just for the competitive power they desire to achieve but also to prevent their fears and anxieties for the future.

Industrial revolutions have always led to the replanning of business life. In that case, it is thought to be appropriate to illustrate the main lines of the developments experienced in the Industrial Revolution until today.

Industrial Revolutions

It is mainly accepted that the Industry 4.0 stage, which we live in today, is reached following three major industrial revolutions (Industry 1.0, Industry 2.0 and Industry 3.0). In the first Industrial Revolution, which started in the 1760s and lasted until the 1840s (Schwap, 2017), with James Watt's invention of the steam engine in 1770, production evolved from physical strength to machine power (Bulut & Akçacı, 2017). Thus, thanks to steam power, the production made with the muscle power of people transformed into the integration of mechanical power into production. After this mechanisation, technology advanced further. The second Industrial Revolution, the beginning of which coincides with between 1840 and 1870, started with the discovery of electricity and the development of the mass production concept on the production line. The electricity usage of factories and cities began with Edison in 1882. With the transfer of electricity to the machines, mass production started. After World War II, the third industrial revolution started. The most distinctive feature of the 3rd industrial revolution was the rapid development in information technologies (Özsoylu, 2017). According to Schwap (2017), the third industrial revolution began with the emergence of semiconductors and mainframe computers in the 1960s. This revolution, which continued with the introduction of personal computers in the 1970s and 1980s, and the Internet in the 1990s, was also called the digital revolution. Towards the end of the Industry 3.0 period, while computer technologies took their place in all areas of life, processor speeds also increased considerably (Celiktas et al, 2015).

The Fourth Industrial Revolution, which was officially vocalised at the Hannover Fair in Germany in 2011, still continuing its rapid development. The fourth industrial revolution is characterised

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