


# Chapter 16

## Developing Global Relevant Skills in the Fourth Industrial Revolution

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### ABSTRACT

*This chapter carries out extensive review of literature on the 4th Industrial Revolution. In the last decades, many stakeholders such as industries, governments, employers and employees' organisations, workers and their unions, and academics have expressed divergent opinion of the 4th Industrial Revolution. The 4th industrial revolution is the 4th stage of a mechanical movement process that began towards the end of the 18th century where mechanised production replaced manual production process. Research shows that the 4th Industrial Revolution brought about 'disruptive technologies' such as artificial intelligence, robotics, blockchain, and 3D printing, which transforms social, economic, and political systems, often in unpredictable ways.*

## **INTRODUCTION**

In the last decade, there has been expressions of anxiety from various quarters on the 4<sup>th</sup> industrial revolution. There are insinuations of job losses both from business owners and employees as a result of improved production process and hi-technology, especially in the areas of digital automations and the robotics. This is because it is believed that both the robotics and digital automations are the drivers of the 4<sup>th</sup> industrial revolution. However, the 4<sup>th</sup> industrial revolution will be handicapped and hampered without the repositioning of human capital to provide the prerequisite and required skills, knowledge, intellectual capital and the basic structures on which it will stand.

The 4<sup>th</sup> industrial revolution is the 4<sup>th</sup> stage of a mechanical movement process that began towards the end of the 18<sup>th</sup> century where mechanised production replaced manual production process. The second stage started towards the beginning of the 20<sup>th</sup> century with the era of mass production due to improved technology. That stage was followed by the digital automation era, where productions were based on electrical electronics and information technologies. The era is gradually fading into the 4<sup>th</sup> era which according to Bahrin, Othman, Azli and Talib (2016), is a SMART dispensation (smart phone, smart TV, smart home gadget and appliances, among many others are the other of the day). The production process is smart driven through cyber physical systems, smart factory, smart production and advance manufacturing (Zhou, Li, Zhou, Wang, Zang & Meng, 2018).

Seeing that smart human intelligence, knowledge and skills are required to fit into the scope of the 4<sup>th</sup> industrial revolution, there is the need to develop special skill-set and high level of intellectual capital to aid the production process. There is also the need to develop a business mind and orientation for this era (Falola, 2017). The focus is expected to be more on how to develop special skills that will place human capital at the cutting edge of the innovations. More so, according to the Chartered Institute of Personnel Development Technical Report (2017), a paradigm shift from production-based economy to a knowledge- based economy is inevitable.

The purpose of this chapter is to explain the need to develop global relevant skills and knowledge needed for the 4<sup>th</sup> Industrial revolution because the impact of the revolution both positively and negatively will depend on the type of skill, knowledge and the career path an individual has chosen. For instance, jobs that are based on physical strength and replications may be the first casualties of the revolution while jobs that involve skills and creativity thinking were affected. Also, there will be creation of new jobs that require specialised skills and creativity to handle. The robotics may be available and programmed to carry out lots of jobs, especially those that involve physicality and speed; however, it cannot be as creative as human beings (Gray, 2016).

## **HISTORICAL BACKGROUND OF THE 4<sup>th</sup> INDUSTRIAL REVOLUTION**

Since the emergence of the capital firm, historical events have revealed that there was paradigm shift in the firm which coincides with Industrial Revolutions. Additionally, in today's information communication technology (ICT) many firms have witnessed another important shift in information communication technology. According to More (2002), since Toynbee in 1884, historians had difficulty in unraveling the Gordian knot of the British Industrial Revolution. While some have tried to unpick it, others on the other hand tried to cut through it. However, if the knot has been loosened here or there it remains largely

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