

Chapter 4

Reshaping Education and Entrepreneurial Skills for Industry 4.0

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ABSTRACT

Since the coinage of the Fourth Industrial Revolution (4IR), there has been plethora of studies on the concept. The 4IR, otherwise referred to as Industry 4.0, is a nomenclature used by Klaus Schwab to describes the historical progression of technological advancement. The 4IR is principally the integration of the physical, digital, and industrial worlds. The testimonies of these advancements will result in self-driving cars, intelligent robots, autonomous drones, 3D printing, smart sensors, among several others. In fact, this is already a reality and is revolutionising our world. Given all these technological advances and unimaginable possibilities of the future, it is very sacrosanct to examine the role education will play in this era. What entrepreneurial skills will be required for the 4IR? How does entrepreneurial ecosystem position themselves to thrive in this era? This chapter explores those skills needed in the 4IR.

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INTRODUCTION

Education is a life-long learning process that is associated with a specific activity (Jarvis, 2018). It is a process of training and understanding knowledge, skills or attitudes (Titmus, 2014). The methodology of the word “process” in gaining knowledge and skills implies that education involves a series of events that an individual undertakes at any stage of life. But these series of events are often influenced by some dynamic forces. Among these forces, the most impactful on education is technology (Okurumeh, 2013). The continuous change in technology mirrors how teaching and learning in education have evolved over time. Globally, technology has continued to dictate business models, health deliveries, demographic changes and economic growth, particularly the formal education. Unfortunately, the standard of teaching and learning in this 21st century is not in tandem with the pace of technological advancement bearing in mind the advent of Industry 4.0. Consequently, the gap between the supply and demand for required skills continues to widen. Hence, the need to align the pedagogical strategies in acquiring knowledge and skills with the benefits of the digital revolution.

Numerous studies have identified skills mismatch as the cause of unemployment (Schwab, 2017; Frey & Osborne, 2013; Peters, 2017). Globally, unemployment has been identified as a “wicked” problem (Rittel & Webber, 1973). Scholarly works have advanced that one of the ways to combat this economic scourge is to develop entrepreneurship (Lame & Yusoff, 2013). Government, private and public institutions are becoming more aware of the pivotal role of entrepreneurship. Entrepreneurship has become more crucial for economic drive and sustainability than before (Toma, Grigore & Marinescu, 2013). It is the drive for business creation and wealth creation. Previous studies submit that entrepreneurial skills are the pre-requisite for business creation and self-employment (Schumpeter, 2000; Fagge, 2017). Scholars have argued that the shortage of entrepreneurial skills is the cause of low business start-ups and increase in unemployment (Brixiová, Ncube, & Bicaba (2015). Further, shortage of entrepreneurial skills or skills mismatch has remained a precarious case of technological disruption (Brixiová, *et al.*, 2015). This is because changes in technology requires new skills to respond to it. Therefore, it becomes expedient to comprehend the essential entrepreneurial skills that will be required for the 4th Industrial Revolution.

Since the coinage of the Fourth Industrial Revolution, there has been plethora of studies on the concept. The 4IR otherwise referred to as industry 4.0, is a nomenclature used by Klaus Schwab to describe the historical progression of technological advancement. However, to fully comprehend this life changing phenomenon that is characterised by unimaginable future possibilities, it will be important to journey through the evolution of technological advancement. England hosted the first

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