Chapter 1
Rethinking Education System for the Fourth Industrial Revolution

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ABSTRACT

The use of automation and artificial intelligence in recent times has created two options for stakeholders in the global business environment. The stakeholders are capable of becoming the agents or victims of inevitable transformation. This chapter explores a review of education system across the globe in building human capital to address the challenges and take advantage of the opportunities in the fourth industrial revolution. This chapter combines a literature review approach and personal observation in higher education institutions in advancing education system for the fourth industrial revolution. The use of chatbot as a training needs assessment technique is effective in collecting variety of information about needs, problems, potential problems, perceptions, attitudes, and opinions in the digital age. This chapter holds that teaching contents and techniques should be structured in line with the learners’ objectives, students’ needs, and skills in high demand by employers in the fourth industrial revolution.

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INTRODUCTION

Advances in technological innovations, automation and latest development in artificial intelligence (AI) have revolutionised the nature of work and created a demand for new set of skills to navigate the fourth industrial revolution (Industry 4.0). The Industry 4.0 is occasioned by developments in the fields such as artificial intelligence and machine-learning, robotics, nanotechnology, 3-D printing, and genetics and biotechnology, which have caused widespread disruption in business models and labour markets (World Economic Forum, 2016). Accordingly, with enormous change in the skills requirement to thrive in the new landscape. The World Economic Forum (2017) submits that education and training systems have remained stagnant due to low investments in education for decades, leading to production of skills that are inadequate for the new labour markets. The higher education institutions (HEIs) world-wide need to review their curricula in line with the new skills or competencies that are essential in the fourth industrial revolution. Such considerations and developments by the HEIs will enhance graduate employability and entrepreneurial activities in the Industry 4.0.

The Conventional Universities, Corporate Universities and Massive Open Online Courses (MOOCs) should be geared towards developing students or workers that can face the challenges of the Industry 4.0, in terms of knowledge, skills and abilities. Preparing students and workers for the next industrial revolution could be used to reduce the adverse effects of AI on the future workforce. For example, by upskilling workers into technical or other functional areas of the business as a way of promoting job security in the Industry 4.0. This chapter seeks to sensitise HEIs on curricula review through partnership with the Industry in meeting labour markets’ requirements in the digital age. The chapter also provide insights on training needs assessment at individual, group, organisational, national and global levels. The chapter explores a perspective shift in human capital formation as technology advances and based on the future challenges of the Industry 4.0.

BACKGROUND

The first industrial revolution occurred in the 18th century, which started with the mechanisation of production starting with water and steam pressure (Noble, 2017; Tann, 2015). This was characterised as the after war economic roar, it consisted of technological advancement in the production and manufacturing sectors. Troxler (2013) puts it that mechanization, centralized factories and industrial capitalists were introduced in the first industrial revolution. Accordingly, the flagship machine was the steam engine, which created a division between labour and capital.
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