The Policy Challenge of High Skills Vocational Education and Training in the Future Social Changes

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ABSTRACT

The article aims to analyze the cases of high skills human resources development (HRD) vocational training programs in future strategic industries. This article analyzes the cases of ongoing HRD training programs for strategic industries in Korea. The results of the analysis are as follows. First, the strategic industry training, carried out in specialized industrial training institutions in Korea, are mostly focused on the environmental, weather, and robotics industries, in addition to bio-industry. Second, the key drivers of future high skills strategy training turned out to be industrial convergence and globalization. Third, many experts were invited to be instructors to manage the quality of the high skills training programs. Based on the findings of these case studies, this article suggests the promotion of high skill vocational training for strategic industries in Korea.

KEYWORDS

Future Technological Changes, High Skills Vocational Education and Training, Skill Framework Systems, Strategic Industry HRD, Vocational Training Outcomes

1. INTRODUCTION

Korea has started turning into an aging society with lower birth rates and longer life expectancies (Eun, 2007). These rapid changes in the population’s structure are expected to have negative effects, such as long-term low economic growth and low employment, on the national economy’s development. In the current scenario, economic growth and industrial competitiveness are shifting from “labor and efficiency” to “knowledge and technology.” In other words, existing technologies and products are being integrated creatively, based on information and communications technology (ICT), to facilitate value-addition, job creation, and new economic growth engines. Such industrial convergence forms an aspect of the future strategic industry (Korea Employers Federation, 2013).

One significant reason for paying attention to human resources development (HRD) regarding the strategic industry is related to the advent of the Fourth Industrial Revolution. Since the Fourth Industrial Revolution was mentioned in Davos Forum in 2016, the world has focused on how to lead the rapidly changing society and technological changes. Skepticism regarding weakening competitiveness and falling behind, if not properly leading future social and technological changes, brings such an atmosphere forward.

It is important to discuss the direction of vocational training in the strategic industry at this point. However, there is no broad agreement on the definition of a strategic industry; it can generally

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be defined as an industry that accounts for a national competitiveness and generates a ripple effect of employment by inducing positive externality (Lee & Lim, 2016). One recent global trend is to turn certain advanced technologies or fields that are considered important for national economy or survival in the future into strategic industries rather than selecting one specific industry as a strategic industry. In particular, as the trend shifts toward building partnerships to create a high-skill society and specify policy-oriented arguments (Brown, 1999; 2001; Lloyd & Payne, 2003), efforts are being made to find a high-skill equilibrium and establish a socioeconomic and institutional framework that can resolve economic depression issues by supplying and utilizing abundant skilled human resources (Giguere, 2008).

Korea is also paying greater attention to high-skill vocational training that focuses on future strategic industries to develop new growth engines in a society that is experiencing low economic growth (Korea Employers Federation, 2013). Thus, this study will examine high-skill HRD training programs and the expertise of human resources in strategic industries to nurture creative experts who will focus on knowledge and technology that can serve as future growth engines. The skill support policies for human resources in strategic industries are associated with economic output, and thus they fulfill various roles in national competitiveness, the labor market, and social shifts. The research questions are as follows: What are the characteristics of strategic industries? What is the status of vocational training in strategic industries? What are typical cases of high-skill vocational education and training? What are the directions and challenges of high-skill training policies in response to future strategic industries?

2. ANALYSIS OF PREVIOUS STUDIES

2.1. 4th Industrial Revolution and Changes in Labor Market

Many forecast reports have explained how the Fourth Industrial Revolution will affect our society. The Future of Jobs (2016) divided the causes of the Fourth Industrial Revolution into socio-economic and technological changes. Socio-economic changes include the expansion of the working environment and work flexibility, the emergence of an aging society, and rapid urbanization. The technological changes involve mobile internet, cloud technology, big data, and the Internet of Things (IoT) (The World Economic Forum, 2016). In the study on changes in the UK labor market, UKCES (2014) presented the following causes for change: management/economic aspects (including changes in the economic outlook and the advent of a new management environment), social/personal aspects (including increased demand on the work and life balance, population changes, working environment changes, and increased diversity), and digitization technology/innovative aspects (convergence technologies, links between industry and academia, and the development of ICT and big data). In particular, the WEF Survey Report (2015) suggested the following trends form a megatrend that will lead society in future: The connection between people and the internet, computing, communication, IoT, artificial intelligence, and big data, the sharing economy, and the digitization of matter). It also expects that such a megatrend will create a radical tipping point (The World Economic Forum, 2015).

The Fourth Industrial Revolution is affecting how jobs are structured and change (Kim, 2016). In particular, technological advances and computer automation will directly influence simple and repetitive jobs and low-skill jobs, thereby reducing the employment rate. The automation of computers and technologies will lead to the disappearance of jobs (including telemarketers, librarians, and tax drivers) (Frey & Osborn, 2013). The Future of Jobs (2016) predicted that the number of jobs that will disappear due to technological advances over the next five years will reach 7.1 million in 15 developed countries and emerging markets, while only two million jobs will be created, thereby decreasing the total number of jobs by more than 5.1 million ((The World Economic Forum, 2016).

Austria expects that low-level social interaction, low-level creativity, and low-level mobility and dexterity will likely be replaced by automation. According to Austria, there is a high probability that 39.6% of current jobs will be replaced by computer automation within 10–15 years (CEDA, 2015).
MISQ: A Framework to Analyze and Optimize Web Service Composition in Business Service Networks
www.igi-global.com/article/misq-framework-analyze-optimize-web/1487?camid=4v1a