EDUCATION POLICY FRAMEWORK – AN OVERVIEWAPPROACH

Ph.D. Nguyen Duc Huu

Vietnam University of Trade Union

Email:huund@dhcd.edu.vn

Abstract:

The fourth industrial revolution, alsoknown as the digital revolution, took place at the beginning of the 21st century. This revolution strongly affects many areas, many aspects of social life, in particular, a high-quality human resource is indispensable; human resources are direct subjects of education and training.

Keywords: Education, Policy Framework, Industry 4.0

1. Introduction

Technology and globalization are dramatically transforming business models in all areas, including new forms of work – as well as skills in current jobs. Many studies have raised the risk of automation up to half of the total current jobs, other forecasts show that the risk is significantly lower than the value of 9% of current jobs. On average, a third of the skills needed to carry out today's work will be completely replaced by 2020.

In the context of the education and training system, which is still largely static and has not been invested for decades, is largely insufficient for these new needs. Some studies suggest that 65% of children will have jobs where current education does not meet the requirements of work when entering working age. This exacerbates the skills gap and unemployment in the workforce as predictable results in the future.

Along with that, the cultural norms and institutions that are largely obsolete create barriers that directly impact this. Despite the increasing level of education, women continue to be under-represented in the workforce, especially in potential sectors and high-status jobs. According to the latest data, on average globally, women have less than two-thirds of the economic opportunity that men have, and the rate of progress is stalling. These moves are more influenced through demographic factors, geographical and economic factors, and their result is to create a challenge for global business, government and individuals.

The World Economic Forum's system initiative on the Future of Education, Gender and Work is an important conference.There business leaders, policymakers, associations, educational institutions and research institutes come together to exchange information about ideas, establish priorities and commitments in

coordinated action. Dialogue on the Future of Education, Gender and Work is a format in the System Initiative, through which leadership from businesses, governments, a scholars and civil society develops a common, future-ready agenda on important issues emerging from the topic

As the Fourth Industrial Revolution took place, it provided the driving force for rapid reform. At the World Economic Forum, the proposals will be used to form public-private partnerships with education, gender and work in specific countries and regions. Through the content of the program, the dialogue will encourage a common vision of priorities for reform in education, supporting leaders in mobilizing for investment in human resources in the context of the Fourth Industrial Revolution.

2. Literature Review

Most education systems today are based on the model introduced more than a century ago. Fragmented efforts of reform and modernization have proven, in most cases, insufficient to address the growing gap between the common education system, the needs of modern life and the new labor market (Patterson, 2004). Governments, businesses and individual students must grasp the real need for comprehensive change to fill the gap as the world enters the Fourth Industrial Revolution.

2.1. *Education ecosystem for children and adolescents*

Children's education needs to be established early. Science has proven that the first 1,000 days of a child's life are critical to a child's life chances and future. Studies have explained that parental education is highly correlation with the development of their children. (Lowe&Lowe, 2010b)So early childhood education is critical to making further progresson human resources in developing countries. Currently, this topic usually does not have a policy combination.

At the heart of the "ready for the future" education ecosystem, the curriculum is designed to communicate knowledge and skills with continuous career guidance. (S. M. Lord et al., 2019)a view to the professionalization of the future workforce. The practice, counseling, access to the network of employers can contribute to the willingness of young people to work, equip them with the capacity to help them visualize a variety of career paths. (University & 2011, n.d.)Exposure to employment opportunities may also show a return on investment in education. Studies have explained that, in low-resource environments, the vision of job opportunities can enhance educational cases, especially for girls' education. (M. Flek et al., n.d.) . Since learning about compulsory education and basic skills has encouraged parents to keep their daughters at school longer. Career counseling and workplace exposure can also facilitate learning and job transformation and help create a more level playing field by directing individuals towards external professions or opportunities. This also reduces dependence on social stereotypes or stereotypes

Mastering digital technology is rapidly changing the way we interact and work, link communities, workers have opened up new opportunities. However, increasing the number of science, technology, engineering and mathematics (STEM) within the framework of the current education system is not a "universal key" to mastering the Fourth Industrial Revolution. (and &2004, n.d.) While increasing the STEM understanding of the population is undoubtedly important, the connection between science and humanities in education is now at a great distance. It focuses only on theory while limiting the application and learning experience. (S. Lord et al., n.d.)

In addition to basic digital capabilities, i.e. digital ownership skills and an understanding of what to do with them, education should go further. By give the person a deep understanding of how to apply and innovate with technology so that they can play an active role in the formation of the tools of the future. (Lowe&Lowe, 2010a) With the rapid progress of the labor market, most individuals who rely solely on a narrow set of skills or expertise will not be able to sustain a long-term career in the economy of the future. These modern learning programs can be best distributed through public institutions, well managed and private sector-first thinking, or a combination of both. (Eriksen et al., n.d.)There are two main components to getting this : first, *what to teach*;and, secondly, how to teach *it*. (M.B. Flek & Ugnich, 2021)While acknowledging a wide range of pedagogical approaches around the world, there is a growing consensus that transition plans, training programs must focus on: linguistics, mathematics and technologically civilized things that all work roles will entail in the future; ensuring the broadness and depth of subject knowledge and interdisciplinary connectivity; global development of value systems regardlessof nationality and ethnicity. Education should be directed towards awareness such as problem solving; thinking, project management and creativity. (Lowe & Lowe, 2010a)

2.2. *Develop professional teachers, improve the quality of vocational training*

The professionalized teaching force will need an additional 26 million teachers by 2030 to achieve the Sustainable Development Goals (SDGs) for education. (S. Lord et al., n.d.)However, many teachers today do not have enough opportunities to continue to develop their professional skills. (S Koul et al., n.d.)resources in the future.

Vocational engineering education and training has been abandoned in the global education system in recent decades. The quality of technology education is a key motivation for economic growth, such as training workers for technical and skilled jobs in developing sectors such as healthcare, construction and advanced manufacturing. However, many countries still focus on university success, while apprenticeships are considered only "second

choice" for students. (Zhaoxin et al., n.d.)This view is no longer just right today

A future-oriented vocational education ecosystem requires many key activities of all stakeholders: 1) increased access to research and development qualifications; 2) develop a certification system based on agreed industry standards and identify the needs of both academics and employers and 3) enhance the social status of vocational training. Consider vocational training an effective educational path not only for students, families, policymakers and other stakeholders.

Across most industries and technologies, demographic changes are shortening the shelf life of workers. Regardless of their current capacity, workers will need to retrain in labor skills throughout their working life. Retraining and improving skills for all employees must be carried out on an ongoing basis. .

2.3. Transforming the education ecosystem associated with interdisciplinary cooperation

Coordination on educational issues includes strengthening governance, management and funding for education. (Surabhi Koul & Nayar, 2021; Llorens et al., 2014; Siebrits & van de Heyde, 2019; Zhaoxin et al., n.d.)In addition

to combining key ministries, a multidisciplinary set of access to education needs to bring employers, trade unions, and others in pursuit of a comprehensive education policy. (Bilal et al., n.d.). This means carefully considering the autonomy of education leaders as well as defining a clear regulatory framework for private sector participants. (Huiqing et al., n.d.; Pestereva et al., 2019) with educators to support the development of both. (Mcelroy / Hester, n.d.) Parents, teachers and students also have a fundamental role to play in proactively transforming education. These stakeholders can work together to develop relevant education policies and training programs to better meet the needs of the labor market. (Dan et al., n.d.; Heyde et al., n.d.)

Another factor to take into account is the reform plan of education. It is estimated that the average length of the term of office of education ministers in the world is about 4-6 years. However, education reform requires long-term thinking and stability beyond the election cycle, especially the transformational challenge of the Fourth Industrial Revolution. (Zinkovskaya A V et al., 2020)perstability of direction and stability as the system progresses. (Marginson, 2011)

Comprehensive adult training and equipment of Singgapore education.

SkillsFuture (Singapore) SkillsFuture, an initiative of the Singapore Ministry of Human Resources, seeks to develop skills in the population by offering on-demand training courses with the goal of creating a highly skilled and competitive workforce that contributes to raising living standards. The government realizes that due to technological advances and innovation, the skills required for a job today

may not be related to the future. The SkillsFuture Council, headed by the Deputy Prime Minister of the Government of Singapore, focuses on developing future-oriented skills to improve productivity. The focus is on moving towards an economy where individuals seek lifelong learning within a professional scope that not only has current needs in their work.(Marginson, 2011)

2.4. Transforming the education ecosystem associated with vocational training and career counseling

While education affects most public sectors and economic life, the current education system generally follows only directives from government agencies, with little or no workforce representation. In Germany, vocational training is carried out in a dual model. The country's T-training act stipulates that 500,000 training contracts must be tied to the company one year. (Ratzmann et al., 2007) Students divide their day learning plans. Between teaching in the classroom and training work at a company, often students have to spend 3-4 days a week at a company to receive the necessary skills for their specialized work. This also gives students the opportunity to learn work habits and absorb the company culture. The duration of apprenticeships is from 2-3 years, and during this period, students are also paid for their time. Employers in Germany demonstrate that that practical application helps develop skills, allowing them to create an easy transition from a classroom environment to a work environment. (Cortina & Thames, 2013)

The Swiss vocational training and vocational training system follows a similar system , for example 3-4 years of training in combination with a practice class. Students are entitled to an exercise for time at work. (Toulouse et al., 2018) coordinating partnerships: professional organizations, cantons (state governments) and the Swiss Federation (federal government) work together to identify programs and skill sets to establish standards for occupations across the country. After graduation, in addition to working, the anethal can earn a college degree or go to classes to obtain additional certifications, creating a solid basis for lifelong learning. (Weber, 1999)

In the United States used their large trove of historical and labor market data to design the RightSkill Program, providing job miners with the right academic experience to prepare: (a) helping individuals make good choices about education, training, and careers; (b) develop a high-quality education and training system that continuously meets the development needs of the sector; (c) promote employer recognition and career development based on skills and proficiency; and (d) foster a culture that supports lifelong learning. (kappan & 2010, n.d.; Solomon & Solomon, 1993; Weber, 1999)

The Singapore government also announced that every individual aged 25 and

over will receive an initial credit of S$500, which will be increased periodically and will not expire. (Gopinathan, 2007) for a number of government-supported courses targeting multiple individuals. SkillsFuture is expected to invest more than S$1 billion a year from 2015 to 2020 on such initiatives as career guidance counseling for students, advanced apprenticeship programs, and grants for learning during career transformation. The Government of Singapore has spent about S$600 million a year over the past five years on continuing training. Singaporeans who want to build specific skills in developing industries can apply to the SkillsFuture Study Award. About 2,000 such awards will be awarded annually. About 100 SkillsFuture scholarships a year will be awarded from 2016to those who want to continue developing their skills to a higher level(Marginson, 2011)

Finland education model

The Finland education system has long been recognized as one of the most successful in the world. The Finland model is based on a number of core success factors, including: (a) an emphasis on teacher training, which is considered an elite profession with high entry standards; (b) access to a standard curriculum, based on the provision of a high-quality teaching system; (c) particular emphasis on integration and diversity in primary education, (d) regularly updating the national curriculum every 10 years to provide an overall framework, with local freedom to customize; (e) school quality emphasizes the importance of testing and selection.

Some schools in Finland are also piloting "self-assessment" tests, where students are involved in determining their own progress, thanks to which students review their work and are encouraged to provide positive and negative feedback on the learning(Käpylä & Wahlström, 2000; Marginson, 2011; Ostinelli, 2009)

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3. Policy framework from the overview results

To complement the discussion above on the main areas of activity and the core design principles of the education ecosystem,a policy framework on the basis of a combination of general principles isnecessary. It is a simple set of self-assessment tools, which quatly describes and is consistent with the available education system of many countries. The contents of this policy framework are rated as the best. They are used for initial guidance for stakeholders to use to self-assess each country's education system (table1)

Table 1: Suggestions for education ecosystem policy framework

Educational components	Goals to be achieved
Early education of children	• Improve reading knowledge and culture among current parents and look forward to encouraging them to participate in their children's early learning • Provide flexible work arrangements, workplaces, nurseries, grants, or other assistance programs for working parents • Increased coordination among ministries at the beginning of childhood development • Encouraging employers to provide childcare solutions
Programs 'ready in the future'	• Collaborate with local educational institutions to ensure curriculum development is informed by market professionals, • Design and provide interventions to enhance STEM skills, employer skills and/or global citizenship • Cons conformity with micro standards with national standards and quality frameworks • Expand assessment beyond trial methods based on traditional approaches • Create a framework for continuous and up-to-date program review
Professional teaching	• Provide contact in a work environment with educators (teachers) exterior) • Develop skills-based employee volunteer programs • Introducing tools and resources for educators to improve teaching, • Promote private sector participation in teacher training and engineer training

	• Create conditions for teachers to actively participate in lifelong learning
Students are exposed to career and workplace activities early	• Linking with educational institutions to provide career counseling and training • Organize work-based learning for current students (work exposure, apprenticeships, apprenticeships) as a graduation requirement for both higher education and vocational programs • Improve the capacity and quality of consulting service providers • Collaborate with the private sector on skills testing • Develop digital and ICT skills among the workforce through online learning platforms (in short-term training) and long-term training ("training camps") • Enhance essential tech skills in the workplace with students during work-based learning and with educators • Support ICT infrastructure and access to educational institutions
Respect for professional principles in education	• Organize work-based learning for current students (work exposure, apprenticeships, apprenticeships) • Identify the importance of vocational training and promote vocational training through the parent-teacher association path • Strengthen the career of vocational training through public campaigns • Introducing vocational programs in high schools, encouraging the private sector to invest in infrastructure for vocational training
Establish a new agreement on learning life	• Actively support employees to participate in

	continuous learning, professional development through various channels • Encourage re-education and training among workplace officials • Cons conformity with micro standards with national standards of quality framework • Encourage and support individuals to pursue lifelong learning opportunities
Open to educational innovation	• Partner with educational institutions to provide out-of-classroom learning • Experiment with greater autonomy in education and vocational training institutions • Support testing and scale up educational innovation

4. Conclusion

Although there are different views, the conference on education, gender and employment within the framework of the World Economic Forum affirmed the urgent need to innovate the global education system. Governments, employers, educators and parents must work together to develop a proper education model. The rich talent of individuals through education will promote economic growth and strengthen social cohesion. There is no single way forward. Depending on the conditions and circumstances, some strategies and tools will be morefeasibleand effective than others. Digital technology can help companies, schools, and governments anticipate and meet the higher demands of the labor market. Infact, developed countries are studying case intervention, stepping up investment in preschool quality and alternative care. The world's leading universities have taken data from thousands of online courses for free download while other platform programs also offer parallel educational programs to create competition in open education models.The growing pace of technological change and globalization has created new opportunities, but has also reflected the importance of educational innovation tied to the labour market. The public and private sector education and training system has highlighted the need for links between governments, businesses and the education sector. And while the standard of education systems is very high-specific,its operation cannot be effective without the cooperation of the private sector and other stakeholders.

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