

INTRODUCTION

1. The need of the study

After seven years, since the phrase “Fourth Industrial Revolution” appeared, there has been a Resolution which has great theoretical and practical significance for the industrialization and modernization in our country - Resolution No. 52-NQ/TW dated September 27th, 2019 of the Politburo on a number of guidelines and policies to proactively participate in the Fourth Industrial Revolution. The emergence of the fourth industrial revolution in our country in the context of industrialization and modernization, together with facing new challenges and opportunities in transforming traditional production and services to a more civilized production, requires higher quality of the labor force as a decisive factor for economic growth in the new situation. Therefore, our Party has officially expressed our viewpoints and policies on proactively participating in this revolution and taking advantage of the opportunities to accelerate the process of industrialization and modernization of the country. The government also considers proactively participating in the Fourth Industrial Revolution as an objective necessity to "limit negative impacts, ensure national defense, security, safety, social justice and sustainability of the country's development process. On the other hand, to participate effectively, the Party also requires “renewal of thinking about economic and social management, and improvement of appropriate institutions. There needs to be open and creative approaches..., while maximizing resources, ensuring sufficient resources for proactive participation in the Fourth Industrial Revolution”.

Ho Chi Minh City is one of the economic, cultural, scientific and technological centers of Vietnam, and at the same time is a hub for international exchange and integration, a core and motivational force for the development of economic regions in the southern provinces. This is also one of the centers for training high-quality human resources to meet the requirements of the country's industrialization and modernization in recent times. In the new context of the fourth industrial revolution, vocational colleges as one of the city's vocational training institutions have been sensitive in seizing opportunities and making efforts to respond to the challenges brought about by this revolution to carry out fundamental innovations in programs,

content and training methods to improve the effectiveness of training high-quality human resources.

However, before increasingly high and strict requirements of the labor market, the trained human resources of the City in general, and vocational colleges' here in particular, still have many limitations and shortcomings in both quantity and quality. Therefore, in order to further improve the quality of training, vocational colleges in the city need to promote innovation in the spirit of Directive No. 21-CT/TW dated May 4th , 2023 of the Secretariat on continuing to innovate, develop and improve the quality of vocational education to 2030, with a vision to 2045.

Because of the mentioned reasons, we chose the topic "*Training high quality human resources at vocational colleges in Ho Chi Minh city to meet the requirement of the fourth industrial revolution* " for our doctoral thesis in philosophy.

2. Objectives and duties of the thesis

2.1. Objectives

From analyzing the theoretical basis of high-quality human resources to meet the requirements of the fourth industrial revolution, the thesis clarifies the current situation of high-quality human resource training in vocational colleges in Ho Chi Minh City and proposes a number of main directions and solutions in order to continue to innovate, develop and improve the quality of vocational training for these vocational training institutions in the new situation.

2.2. Duties

Firstly, analyze and clarify the theoretical basis of human resources and high-quality human resources; the impact of the fourth industrial revolution on the field of training and development of high-quality human resources in the current vocational education system of our country.

Secondly, analyze and clarify the current situation of training high-quality human resources and point out the basic causes leading to that situation in Vocational Colleges in Ho Chi Minh City as well as the issues that need to be resolved in the context of the fourth industrial revolution.

Thirdly, propose some main directions and basic solutions to improve the effectiveness of training high-quality human resources at Ho Chi Minh City Vocational Colleges to meet the requirements of the current fourth industrial revolution.

3. Subjects and scope of the study

3.1. Subjects of the study

The subject of the study is training high-quality human resources at Vocational Colleges in Ho Chi Minh City to meet the requirement of the fourth industrial revolution.

3.2. The scope of the study

3.2.1. Research on methods, contents, programs and training methods of high-quality human resources at college level in vocational colleges in Ho Chi Minh City to meet the Fourth Industrial Revolution

3.2.2. *Geographical scope*: research on the current situations of high-quality human resource training at vocational colleges in Ho Chi Minh City.

3.2.3. *Time scope*: the thesis is limited to the time from after the 11th National Congress of the Party until now.

4. Theoretical basis and research methods

4.1. Theoretical basis

The thesis is conducted on the basis of applying the theory of Marxism-Leninism, Ho Chi Minh's Thought and the viewpoint of the Communist Party of Vietnam on the relationship between the essence, level of forces and production relations in the context of the Fourth Industrial Revolution.

4.2. Research methods

The thesis uses Marxist methodology, interdisciplinary methods such as economics, politics, culture, among of them, logical-historical, analytical-synthetic, deductive-inductive, comparative, generalizing methods,.. are mainly used to research issues of training high-quality human resources to meet the requirements of the Fourth Industrial Revolution.

5. New contributions of the thesis

Firstly, the thesis contributes to clarifying the theoretical aspect of training high-quality human resources in the context of the fourth industrial revolution;

Secondly, the thesis analyzes the impact of the fourth industrial revolution on the field of training high-quality human resources in vocational colleges in Ho Chi Minh City since the 11th National Congress of the Party up to now; *Thirdly*, the thesis proposes the main directions and some basic solutions to continue to innovate and develop the training of high-quality human resources in vocational colleges in Ho Chi Minh City in the coming time to meet the requirements of the fourth industrial revolution.

6. Theoretical and practical significance of the thesis

6.1. Theoretical significance

The results of the thesis contribute to clarifying the Party's viewpoint on developing productive forces on the basis of strongly developing science, technology and innovation to create a breakthrough in improving labor productivity as well as national competitiveness through innovation and development of high-quality human resource training at Vocational Colleges in Ho Chi Minh City today.

6.2. Practical significance

The results of the thesis can be used as reference materials for further research on training high-quality human resources to meet the requirements of the fourth industrial revolution in general, in vocational colleges, in particular.

The thesis can also be used as reference materials for research and teaching of Philosophy, Anthropology, Economics, etc., and related majors in colleges, universities, etc. in Vietnam today.

7. The structure of the thesis

Besides Introduction, Conclusion, References and Appendix, the main content of the dissertation is divided into four chapters, 12 sections.

Chapter 1. LITERATURE REVIEW

1.1. Overview of theoretical works on high-quality human resources to meet the requirements of the fourth industrial revolution

1.1.1. Theoretical works on high quality human resources

We all know that social revolutions in general and industrial revolutions in particular that have once taken place in human history were all carried out by humans. Therefore, no matter how advanced the level of development of science and technology is, they are still the creative products of humans in working process. More precisely, it is the product of human resources in general, high-quality human resources in particular, with important breakthroughs in the knowledge economy, and at the same time, they become the subject of many research fields, such as philosophy, economics, education, etc. From different research perspectives of these fields, theoretical issues on human resource development in general, high-quality human resources to meet the requirements of the fourth industrial revolution all aimed at that goal and are becoming more and more urgent. Firstly, we can look at some theoretical studies on human resources and human resource development to meet the requirements of industrialization and modernization of the country that our Party initiated before the fourth industrial revolution. These are some typical works such as:

In Pham Minh Hac's book "Research on people and human resources for industrialization and modernization"; "*Some orientations to prepare for human resources to gradually meet the requirements of developing the knowledge economy in Vietnam in the first decades of the 21st century - Specialized collection*", conducted by Dr. Hoang Thi Thanh; Tan Ngon Truoc's book "The era of knowledge economy"; *Industrialization and modernization in Vietnam: theory and practice*, by Nguyen Trong Chuan, Nguyen The Nghia. Dang Huu Toan co-author; the book "*Research on people and human resources: Research Yearbook No. 3*"; the book "*Human resources and talents for social development and management of social development in Vietnam in the renovation process: Theoretical issues*" edited by Nguyen Ngoc Phu, etc., all focus on basic theoretical issues on human resources and talents for social development and building and managing social development in Vietnam in the renovation process.

In particular, since the world's industry entered a new revolution - the Industrial Revolution 4.0, the issue of high-quality human resources has attracted a lot of attention from scholars. We can mention the following notable studies: The

doctoral thesis in economics and politics on the topic "*Developing high-quality human resources to form a knowledge-based economy in Vietnam*", by Le Thi Hong Diep; The book "*Competition in human resource selection*" edited by Vu Thanh Son, etc. Among of these works, the authors affirm that human resources are an organic unity between human social capacity (physical strength, intelligence, capacity and skills) and human social dynamism (personality, culture, values); at the same time, clarify the characteristics and role of high-quality human resources in socio-economic development.

1.1.2. Works on the fourth industrial revolution

In the past decade, the phrase “The Fourth Industrial Revolution”, known as “Industry 4.0”, is based on the digital-physical-biological foundation in combination with the breakthrough of the Internet of Things and artificial intelligence, 3D printing technology, etc. Among these scientific works related to the content and characteristics of the Fourth Industrial Revolution, there is the book “Vietnam with the Fourth Industrial Revolution” by the Central Economic Commission; the book about “The Fourth Industrial Revolution: the Revolution of convergence and economization” by Phan Xuan Dung; “Industrialization and modernization of the Vietnamese economy to meet the requirements of the Fourth Industrial Revolution” by Pham Thuyen. The works all focus on the content of the fourth industrial revolution and at different levels they have also mentioned the necessity of improving the quality of human resources to meet the requirements of the fourth industrial revolution.

1.1.3. Works on the impact of the fourth industrial revolution on the field of high-quality human resource development

The proceedings of the Workshop on “Developing Vocational Education in the Digital Age” is a collection of papers on some main contents such as: The impact of the 4.0 Industrial Revolution on education and vocational training; the application of teaching technology and the development of IT capacity for teachers in vocational training institutions; the issue of teaching according to capacity in vocational training and the development of vocational capacity for workers; developing a staff of teachers to adapt to the impact of the fourth industrial revolution; the issue of comprehensive

cooperation between schools and businesses; the application of digital technology, information technology in innovating teaching methods... Thanks to the accurate identification of the impact of the fourth industrial revolution on the field of high-quality human resource development, etc.

1.2. Research on the current status of training high-quality human resources at vocational colleges in Ho Chi Minh City in the context of the fourth industrial revolution

In the context of the fourth industrial revolution, the training of high-quality human resources at vocational colleges in Ho Chi Minh City as well as the whole country is facing shortcomings, not meeting the needs of the labor market. Therefore, the Secretariat issued Directive 21-CT/TW on May 4th, 2023, in which the achievements and limitations of high-quality human resource training activities are clearly pointed out and innovation to meet the requirements of the fourth industrial revolution are also required. That situation is also specifically mentioned in many scientific works, such as:

The book "*Competition in human resource selection*", edited by Vu Thanh Son; Tran Anh Tuan wrote "Report at the Scientific Conference "Sharing resources to meet the requirements of vocational education innovation in the current context"; The Directorate of Vocational Education has published the book "Handbook for connecting vocational education institutions to enterprises". Recently, in the Draft "Vocational education strategy project for the period 2021 - 2030, vision to 2045 of the Government (June 8, 2021), the achievements in the period 2011-2020 were evaluated, and at the same time, the limitations that need to be promptly overcome were clearly stated.

Forecasting and directional views on human resources in general, and high-quality human resources in particular, are crucial aspects in the utilization and development of human resources. In the book "*Scientific and Practical Foundations for Development of Human Resources in Ho Chi Minh City*", the summary record of the *Economic Forum of Ho Chi Minh City in 2018*, many articles address the issues of meeting the requirement between labor supply and demand, mentions some shortcomings on both quantity and quality, and then proposes some "Solutions

for connecting universities, research institutes, and businesses" in human resources training.

1.3. Research projects on directions and main solutions to enhance the effectiveness of training high-quality human resources in vocational colleges in Ho Chi Minh City to meet the requirements of the fourth industrial revolution.

Research on human resources in general, and high-quality human resources in particular, mostly strive to provide solutions to help leaders and managers exploit, utilize, and develop high-quality human resources rationally and effectively. Including:

The work *"Some solutions to connect training and using trained human resources in our country"* by Nguyen Ngoc Thang; The topic *"Research and propose solutions to enhance the efficiency of managing and utilizing human resources in industrialization and modernization process of the country"* carried out by Pham Thanh Nghi. The article: *"Enhancing the quality of human resources to serve the industrialization, modernization of the country, and the development of the knowledge economy"* by Nguyen Van Son in the Journal of Philosophy, Issue 9, 2007; the book: *"Building and developing humans, improving the quality of human resources in the current innovation process in Vietnam"* by Nguyen The Kiet in the Journal of Philosophy, Issue 6, 2008; etc. The book *"Enterprises with a itinerary to approach the Industrial Revolution 4.0"* by Ha Minh Hiep, etc.

1.4. Overview of the main research results related to the topic and the issues raised for the thesis that need to be further resolved

1.4.1. Overview of the main research results related to the topic

By studying scientific works related to the topic, we have briefly summarized the main results achieved by those works as follows:

Firstly, originating from the Party's policies and guidelines on national development, previous scientific works mainly researched human resource development, then high-quality human resources for industrialization and modernization of the country. Therefore, research projects on high-quality human resources often make comments on the importance of developing this human

resource through training associated with innovation in methods, program content and training methods.

Secondly, since the term “Industries 4.0”, the fourth industrial revolution, appeared, it has attracted the attention of theorists around the world and international conferences have been held to discuss the possibility and reality of the fourth industrial revolution. In the context of the fourth industrial revolution, research works have clarified the impacts of this revolution on the field of training high-quality human resources, including both positive impacts that help transform the productive forces and negative impacts that arise socio-economic issues, especially the issue of employment for workers.

Third, there research have clearly shown that training human resources to meet the requirements of the fourth industrial revolution is vital for fundamental and comprehensive reform of education in Vietnam, in general and in Ho Chi Minh City, in particular Therefore, training institutions build their reputations to attract social interest in the young’s career choices for their future.

Fourthly, when mentioning the current situation of training high-quality human resources at vocational colleges in Ho Chi Minh City, the research not only discusses the achievements in training high-quality human resources at these schools, but also points out shortcomings in many aspects, from the policy of allocating resources for training to the methods, content, programs and training methods, leading to the quality of human resources not meeting the requirements of enterprises using labor; the weakness in training coordination between enterprises and schools, the unreasonable structure of training career, not keeping up with the requirements of transformation in production activities, etc.

Fifthly, most of the research has proposed a number of practical and feasible viewpoints, directions and solutions to promote positive aspects and limit weaknesses and shortcomings in training high-quality human resources to meet the requirements of the fourth industrial revolution in vocational colleges in Ho Chi Minh City.

From the main results of domestic and foreign research related to the thesis on training human resources to meet the requirements of the fourth industrial revolution,

the thesis can inherit and develop those results in the process of implementing the thesis topic.

1.4.2. Thesis issues that need to be further resolved

On the basis of researching, analyzing and generalizing the main results from scientific research on training high-quality human resources to meet the requirements of the fourth industrial revolution, we determined that the thesis needs to continue to clarify the following issues:

First, analyze and clarify further theoretical issues on training high-quality human resources to meet the requirements of the fourth industrial revolution.

Second, analyze the current situation of training high-quality human resources in vocational colleges in Ho Chi Minh City, on that basis, point out the causes of that situation in recent time.

Third, on the basis of analyzing the current situation, the causes of the achievements as well as the limitations in training high-quality human resources in vocational colleges in Ho Chi Minh City, the thesis proposes directions and some main solutions to improve the quality and effectiveness of training high-quality human resources to meet the requirements of the current fourth industrial revolution.

Summary of Chapter 1

From the purpose, tasks, objects and scope of the research topic, the author has collected, selected and summarized works related to the topic, at the same time, summarized and objectively evaluated those works to clarify the issues that the thesis needs to continue to solve.

Although the research approaches the issues related to the thesis topic has been done from many different aspects, they are valuable documents for us to refer to and use as data for the implementation of this thesis topic.

Chapter 2

TRAINING HIGH-QUALITY HUMAN RESOURCES MEETING THE REQUIREMENTS OF THE FOURTH INDUSTRIAL REVOLUTION - THEORETICAL BASIS

2.1. Concept of human resources and high-quality human resources

2.1.1. Concept of human resources

Human resources is a concept used to refer to the fundamental resources that promote socio-economic development. From the perspective of the thesis, we define human resources as the leading important factor of productive forces, the total of physical and mental factors of humans, material and spiritual activities of humans that have been creating the capacity and strength to promote socio-economic development.

2.1.2. The concept of high-quality human resources

The concept of high-quality human resources originates from the concept of human resources supplemented with the connotation of “high quality” due to the requirements to fulfill the quality of human resources in socio-economic development (knowledge economy, sustainable economic growth, especially the requirements of the fourth industrial revolution).

From the above analysis, we can generalize some basic contents basing on the research direction of the topic, they are: high capacity and working skills according to the social division of labor; social responsibility, civic awareness and duty, ethics, professional ethics, business culture, etc.

In short, *high-quality human resources is a concept used to refer to a workforce with high levels of education and expertise, professional qualities and working capacity corresponding to specific occupations according to criteria of labor classification, and at the same time, having the ability to quickly adapt to changes in production according to the requirements of the scientific and technological revolution in general, and the fourth industrial revolution in particular.*

2.1.3. Some basic features of high-quality human resources at vocational college level

It is believed that in the reality of social life, every field has high-quality and low-quality human resources. To have high-quality human resources, it is necessary to have appropriate policies on scientific knowledge training associated with improving the professional qualifications and personality of workers.

Qualitatively, high-quality human resources can be identified based on the following criteria: 1. Being the elite of the national human resources; 2. Being a group of workers with good health (physical and mental strength); 3. Having high degrees and good professional qualifications; 4. Having a sense of social responsibility, ethics and personal culture in accordance with social progress; 5. Having high professionalism; 6. In terms of structure, or social components, including intellectuals, managers, businessmen and skilled workers, artisans, good farmers, talented artists, etc.

Quantitatively, high-quality human resources are determined at each specific time. Quantitative criteria will also be an important basis for specifically determining high-quality human resources, which is a basis for adjusting human resource policies. As analyzed above, the quantity of high-quality human resources is always lower than that of normal human resources.

2.1.4. Training high quality human resources at vocational colleges in our country today

Training is an activity that uses specific knowledge, methods, and skills in an organized way to impact the physical and mental health of learners in order to form knowledge, personality skills according to certain purposes and requirements. Training high-quality human resources is a concept used to refer to a set of teaching and learning activities aiming at creating a workforce with high education and qualification, with qualities and capacities, and high professionalism corresponding to specific occupations in accordance to criteria of labor classification and quickly adapting to the knowledge economy, digital economy, etc. according to the requirements of the fourth industrial revolution.

As the fifth one in the eight levels of the National Qualifications Framework, colleges, including vocational colleges, carry out the mission of training high-quality human resources with the ability to directly participate in the production and service process. When discussing training high-quality human resources to meet the requirements of the fourth industrial revolution in the vocational college system, first of all, we need to mention the purpose, content, program, method and training approach.

In terms of purpose, vocational training is a continuous training process for the young generation from high school level to form the personality of a disciplined worker with high technical and vocational skills to meet the requirements of the fourth industrial revolution.

In terms of content, vocational training is based first of all on the progressive trends in training technical workers, on innovative perspectives in determining vocational training content of many countries in the world, in which, "the prominent trends are the integration of content, modernization of content and flexible content structure according to stages and levels or according to the system of training modules".

Accordingly, vocational training content includes: basic knowledge and skills; basic knowledge and skills; vocational techniques, expertise by occupational group; basic vocational skills and specialized skills suitable to production needs. These contents must ensure practicality, basicity, modernity and be systematized so that learners can grasp them easily. On the basis of systematizing knowledge and skills, vocational techniques, combined with other requirements on political, social, professional ethics and physical education to determine training content according to strict pedagogical principles". Students who graduate from the course are awarded a practical engineering certificate

2.2. Overview of the Fourth Industrial Revolution

2.2.1. The formation, content and characteristics of the Fourth Industrial Revolution

2.2.1.1. The formation of the fourth industrial revolution

The first industrial revolution was the transition from simple manual labor to machines, and it lasted for decades. The second industrial revolution involved mechanization and the organization of assembly line production in the 20th century, first in the automobile industry, and then in most other goods. At the beginning of the 21st century, the emergence of the third industrial revolution led to a rejection of using of useful resources and started renewable energy in combination with the use of computers in production, automation and the transition to digital production.

However, while the reality of the Third Industrial Revolution is far from being globalized, the German government coined a new "revolutionary situation" namely

“Industry 4.0” as an inevitability of a future global shift in production with new breakthrough technologies and production methods to Asia and other developed countries.

2.2.1.2. Basic content of the Fourth Industrial Revolution

Digital technology is developed on the basis of information technology, arising the core contents of the Fourth Industrial Revolution, including: *The first is the Internet of Things*. The Internet of Things is simply described as network of physical devices in which all devices are connected, transmitted, interacted and exchanged data with each other via the Internet; *The second is cloud computing*, which is virtual computing server, a computing model that uses computer technology and develops based on the Internet...; *The third is Artificial Intelligence – AI*, is the field of simulating human intelligence processes by machines, especially computer systems... due to the drastic development of big data storage and analysis technologies"; *The fourth is 3D printing technology*, also known as Additive Manufacturing, is the technology of creating a physical object by gradually adding layers of material from a drawing or a pre-existing 3D model;

The fifth is renewable energy – that is, energy that is generated from continuous, limitless sources such as solar, wind, rain, tides, waves and geothermal (energy extracted from the heat of the earth); *The sixth is biotechnology*. with modern biotechnology, a human genome can be sequenced in just a few hours at low cost; *The seventh are other technological breakthroughs*, such as Self-driving technology, Advanced materials - materials that are lighter and durable, recyclable and more adaptable.

2.2.1.3. Characteristics of the Fourth Industrial Revolution

The main applications presented above are the basis for forming the characteristics of the Fourth Industrial Revolution. These characteristics include: Interactivity - the ability to connect, communicate and exchange information and data between people and smart factories (Smart Factory) through cyber-physical systems (Syber – Physical System, CPS); Virtualization - The ability to create a virtual copy of the smart factory (also known as Digital twin);

Decentralization - the ability of the virtual-physical system to decentralize in making production decisions thanks to new technologies (such as 3D printing technology, AI technology...); Continuity - the ability to collect, analyze data and provide continuous analysis according to real time; Modularity - smart factories' ability to "flexibly" adapt to fulfill the changing requirements through the replacement. By generalizing the characteristics of the fourth industrial revolution, it can be seen that the role of science and technology is extremely important; it creates a drastic transformation process from science into a direct productive force.

2.2.2. The essence of the Fourth Industrial Revolution

2.2.2.1. The shift in production structure and its impact on the quality of human resources.

The shift in developed countries with modern industrial foundations under the influence of the fourth industrial revolution is increasingly strong. That is the shift from the traditional centralized production model to the decentralized smart production model; from "design for production" to the "unlimited design" model; "mass production model" to the "flexible production" model; "global supply chain" to "flexible supply" according to customer requirements... Therefore, the quality of human resources must be increasingly developed to suit the needs of the shift in production structure.

2.2.2.2. The Fourth Industrial Revolution and its impact on economic growth based on digital transformation

As we all know, modern science and technology directly create products, so it is an indispensable element of the productive forces. Science and technology, especially digital technology, have been profoundly transforming working methods, simultaneously. As General Secretary and President Xi commented: digital transformation has led to a change in production methods, creating an unprecedented modern production method, which is the "digital production method". Therefore, it can be said that digital technology and digital transformation are revolutions in the productive forces.

2.3. Requirements of the Fourth Industrial Revolution for the field of high-quality human resource training

2.3.1. Training high-quality human resources based on approaching the basic requirements of the Fourth Industrial Revolution on digital transformation

The readiness of approaching index of the Fourth Industrial Revolution is built on the Reference Architectural Model for Industry 4.0 (RAMI 4.0), one of its 6 layers is the Asset Layer, including: equipment, machinery, assets, and people in real space. In addition, the approaching indicators of the Fourth Industrial Revolution must also be based on 4 main pillars: Core pillar of technology; Pillar of automation; Core pillar of process; Core pillar of organization. The core pillar of organization includes the pillar of human resource readiness and the pillar of structure and management. Therefore, the approach of the field of high-quality human resource training needs to be implemented to the following contents:

Firstly, the education sector must place a high priority on STEM training fields, learning from the experiences of advanced industrial countries in the region and the world that have been implementing (such as the US, Korea, Australia, etc.)

Secondly, focus on teaching technology and digital skills, especially "essential skills of the 21st century" including four groups: **thinking skills; working skills; skills of using work tools and life skills in a global society**. To do that, it is extremely necessary to expand online learning programs and lifelong learning with MOOCs (Massive Open Online Courses).

2.3.2. Training high-quality human resources to meet the requirements of the Industrial Revolution in terms of intellectual, mental and physical strength of workers

It is known that, in comparison to natural resources, human resources play a much more important role in the components of social productive forces. In the context of the fourth industrial revolution, humans are both the subject of creation and turning science and technology into direct productive forces, and they are also affected by this revolution. Therefore, physical and mental strength must be closely linked to mental strength, because a person lacking morality (mental strength) means lacking the foundation, like a tree lacking its roots.

Summary of Chapter 2

Theory on human resources and training high-quality human resources to meet the requirements of the Fourth Industrial Revolution aims at explaining and clarifying the objective fact of the advanced human resource training activity before the transformation from traditional production based on the achievements of the three previous Industrial Revolutions into smart, flexible production.

Although the Fourth Industrial Revolution has not yet taken place in many countries around the world, the consequences caused by its impact in the near future will affect all areas of social life, especially for workers who do not have the skills to meet the requirements of technological fields, will lose their jobs, will be forced to find other simpler jobs with lower income. Therefore, developing high-quality human resources on the basis of training and retraining the workforce in digital skills is extremely necessary to achieve the goals of socio-economic development and national security.

Chapter 3

TRAINING HIGH-QUALITY HUMAN RESOURCES TO MEET THE REQUIREMENTS OF THE FOURTH INDUSTRIAL REVOLUTION AT VOCATIONAL COLLEGES IN HO CHI MINH CITY: ACHIEVEMENTS AND PROBLEMS

3.1. Overview of vocational colleges in Ho Chi Minh City and important factors for the field of training high-quality human resources to meet the requirements of the fourth industrial revolution at vocational colleges in Ho Chi Minh City

3.1.1. Overview of Vocational Colleges in Ho Chi Minh City

Ho Chi Minh City is a large urban area with a population of more than 9 million people (accounting for about 10% of the country's population), of which the number of people living in urban areas accounts for 80%, and in rural areas about 20%; the age group from 16-60 accounts for 70%, which means the workforce belongs to the golden population structure. According to Report No. 205/BC-UBND dated October 31st, 2022 of the People's Committee of Ho Chi Minh City, "Until March 2022, there are 370 vocational training institutions in Ho Chi Minh City, of which

60 are colleges. Compared to statistics, in 2023, there are currently 380 vocational training institutions in Ho Chi Minh City, among of which, at college level: there are 62 institutions (50 schools, 02 school branches and 09 training locations).

3.1.2. Regulatory factors for the field of high-quality human resource training at vocational colleges in Ho Chi Minh City today

Firstly, the development orientation of Ho Chi Minh City on the labor market is based on the reality of production, trade, service activities and scientific forecasts on, tends to increase; *Secondly*, the the demand for human resources, especially high-quality human resources, tends to increase; *Thirdly*, the impact of digital transformation through the Fourth Industrial Revolution on high-quality human resources;

3.2. Current situation of training high-quality human resources to meet the requirements of the Fourth Industrial Revolution in vocational colleges in Ho Chi Minh City: achievements and limitations

3.2.1. Achievements in training high-quality human resources in vocational colleges in Ho Chi Minh City and the basic causes of achievements

3.2.1.1. Achievements

First, implementing the Party and State's policies and guidelines on training high-quality human resources; *Second*, achievements in training high-quality human resources attached to social needs and the labor market; *Third*, achievements in building and developing the management and teaching staff; *Fourth*, building and developing networks, improving the quality of vocational education at college level; *Fifth*, achievements in connected and cooperation activities on vocational education among schools, the state and businesses; *Sixth*, achievements in developing facilities and equipment for training high-quality human resources; *Seventh*, achievements in international cooperation. Directorate of Vocational Education has been in the right direction in international cooperation in developing the quality of human resources, especially vocational skills from the experience of developed countries.

3.2.1.2. Reasons for the achievements

Firstly, the City has paid attention to implementing the Party and State's policies on developing high-quality human resources in the context of the fourth industrial revolution; *Secondly*, the State assigned the City's vocational training institutions, depending on specific conditions and the tasks of compiling textbooks and innovating content, methods, and teaching and learning methods, taking the needs of society and the labor market as the basis for adjusting the occupational structure; *Thirdly*, the City has focused on forming and developing a team of management and teaching staff at vocational colleges in terms of both qualifications and professional ethics; *Fourthly*, the cooperation between the three parts: the State, the School, and Enterprises in training activities at vocational colleges is becoming more and more substantial and effective;

3.2.2. Fundamental limitations in training high-quality human resources at vocational colleges in Ho Chi Minh City and the basic causes of the limitations

3.2.2.1. Limitations

First, organizing and implementing vocational training policies in Ho Chi Minh City still face many difficulties and shortcomings. *Secondly*, college enrolment often fails to meet the target; *Third*, the quality of human resources trained at vocational training institutions in general, and at Ho Chi Minh City's Vocational Colleges, in particular, has not fully met the requirements of the labor market; *Fourth*, the school's facilities and training equipment are not only lacking, but also outdated in comparison to modern training requirements; *Fifth*, the standard qualifications of teachers have not been set and the training and developing management staff and teachers in public vocational education institutions still has many limitations; *Sixth*, the cooperation between the State - schools - businesses has not been effective.

3.2.2.2. The fundamental causes of the limitations:

Firstly, the awareness of executive committees, authorities, vocational training institutions and the community of the position, role and importance of vocational training in the new situation is not adequate. *Secondly*, the cause comes from the social psychology that often values degrees and underestimates vocational education at the college level; *Thirdly*, the Covid-19 pandemic has significantly

disrupted and changed the production status of enterprises in the city, leading to fluctuations in the labor market and difficulties in forecasting the demand for labor resources; *Fourthly*, the documents guiding the implementation of issued policies still lack specificity, leading to overlap in the activities of vocational training management agencies; *Fifthly*, the policy of socialization in human resource training has been proposed but there are no specific regulations, making it difficult to implement; *Sixthly*, schools and businesses have not found a common voice in the benefits for both sides in training high-quality human resources;

3.3. Some issues arising from the current situation of training high-quality human resources at vocational colleges in Ho Chi Minh City

Firstly, there is the inadequacy between the promulgation of Party guidelines and State policies on the urgency of fundamental and comprehensive innovation in vocational education, towards the development of high-quality human resources to meet the requirements of the fourth industrial revolution and the lack of decisive and timely involvement of Party committees, departments and training institutions in Ho Chi Minh City in the field of developing high-quality human resources through training at vocational education institutions, including vocational colleges; *Secondly*, the inadequacy and inefficiency in the state management of vocational education and vocational education institutions, especially the overall quality management of both levels; *Third*, the mismatch between supply and demand for high-quality human resources to meet the requirements of the labor market as well as the fourth industrial revolution; *Fourth*, a substantial and effective relationship has not been established during the process of training high-quality human resources between businesses and schools; *Fifth*, the inadequacy and ineffectiveness of propaganda activities about the role and importance of vocational colleges in training high-quality human resources to meet the requirements of the fourth industrial revolution; *Sixth*, the inadequacy of the high-quality human resource training syllabus to meet the requirements of the fourth industrial revolution and comprehensive human development as the leading factor in the structure of modern productive forces in Vietnam; *Seventh*, the field of international cooperation on vocational education in general, and on training high-quality human resources in

particular, at vocational colleges in Ho Chi Minh City is still limited, and has not yet drawn experience and lessons for schools in the methods, syllabus and training methods from advanced countries in the region and the world.

Summary of Chapter 3

The scale of training at vocational colleges in Ho Chi Minh City is not inferior in terms of both the number of schools and key occupations, piloting the training of high-quality human resources in comparison to many other provinces in the country. However, in terms of quality as well as quantity of high-quality human resources, it has not yet fulfilled the needs of the labor market and, more importantly, the requirements of the fourth industrial revolution. Therefore, it is necessary to analyze and clarify the current situation of training high-quality human resources at vocational colleges in Ho Chi Minh City in order to identify the issues that need to be resolved in the context of the current fourth industrial revolution.

Chapter 4

DIRECTIONS AND SOME MAIN SOLUTIONS TO IMPROVE THE EFFICIENCY OF TRAINING HIGH-QUALITY HUMAN RESOURCES TO MEET THE REQUIREMENTS OF THE FOURTH INDUSTRIAL REVOLUTION AT VOCATIONAL COLLEGES IN HO CHI MINH CITY

4.1. Directions to promote training of high-quality human resources to meet the requirements of the fourth industrial revolution at vocational colleges in Ho Chi Minh City today

In terms of direction, from the perspective of researching the topic, we propose three basic directions: 1. Strengthening the implementation of the Party's viewpoints and the State's policies on the role of the field of training high-quality human resources to meet the requirements of the Fourth Industrial Revolution; 2. Strengthening overall management quality in vocational education to improve the quality of human resources to meet the requirements of the Fourth Industrial Revolution; 3. The Department of Labor, Invalids and Social Affairs of Ho Chi Minh City needs to research and develop a separate strategy for training high-quality human resources at the City's vocational colleges to meet the requirements of the Fourth Industrial Revolution.

4.2. Some key solutions to improve the effectiveness of training high-quality human resources to meet the requirements of the Fourth Industrial Revolution at vocational colleges in Ho Chi Minh City

4.2.1. Group of solutions to implement the Party's guidelines and the State's policies on fundamental and comprehensive innovation in the field of vocational education with the aim of developing high-quality human resources to meet the requirements of the Fourth Industrial Revolution

4.2.1.1. Strengthening the dissemination of the role and significance of vocational education in developing high-quality human resources to meet the requirements of the Fourth Industrial Revolution;

4.2.1.2. Innovating population development strategies: social security; improving the physical, intellectual and spiritual quality of the population; taking advantage of the "golden population" structure for the goal of developing high-quality human resources;

4.2.1.3. Innovating the labor structure, improving the vocational skills of workers

4.2.2. Solutions to the problems arising from the current situation of training high-quality human resources at Vocational Colleges in Ho Chi Minh City.

4.2.2.1. Strengthening quality management of vocational education for vocational colleges in Ho Chi Minh City;

4.2.2.2. Innovating training methods toward learner-centered approach to develop high-quality human resources

4.2.2.3. Innovating training content, syllabi and methods;

4.2.2.4. Improving the quality of teaching staff (administrators, lecturers, teachers);

4.2.2.5. Learners need to develop the spirit of autonomy, lifelong learning and personal responsibility to become global citizens.

4.2.2.6. Increasing investment in facilities and teaching equipment for vocational colleges;

4.2.2.7. Strengthening coordination between vocational institutions and enterprises in training high-quality human resources;

4.2.2.8. Strengthening coordination with enterprises in training high-quality human resources

Summary of Chapter 4

In the context of the rapid development of science, technology and engineering, our Party has had a very correct viewpoint on the strategy of developing high-quality human resources to meet the requirements of the fourth industrial revolution through Directives and Resolutions. That viewpoint has been thoroughly grasped by the Government, Ministries, agencies, departments and localities and turned into strategies and plans of developing high-quality human resources for vocational training institutions to implement.

Based on the analysis of the current situation of human resource training in the vocational training system in general, and training high-quality human resources in vocational colleges in Ho Chi Minh City, in particular, the thesis proposes 3 directions and 2 groups of solutions to improve the effectiveness of training high-quality human resources in vocational colleges in Ho Chi Minh City today.

CONCLUSION

Training high-quality human resources in the context of the fourth industrial revolution is an important field of activity, playing a decisive role in socio-economic development and the emergence of industrial civilization in the new era - the era of digital transformation.

Therefore, the vocational education system, including Vocational Colleges in Ho Chi Minh City always receives regular attention from the Party and the State in implementing the goals for developing high-quality human resources for industrialization and modernization of the country in the context of the fourth industrial revolution.

Therefore, to meet the high-quality human resources required by the fourth industrial revolution, from the results of the thesis, we propose the following recommendations:

Firstly, vocational training institutions, including vocational colleges in Ho Chi Minh City, need to grasp more strongly the Party's viewpoints and the State's policies on continuing to innovate, develop and improve the quality of vocational education from now until 2030, with a vision to 2045, and must consider it as the

theoretical basis for directing their activities in training high-quality human resources to meet the requirements of the fourth industrial revolution.

Secondly, vocational colleges in Ho Chi Minh City need to clearly identify their goals and directions and base on which some feasible solutions to improve the effectiveness of training high-quality human resources, including the solutions we proposed in chapter 4 of the thesis are proposed.

Thirdly, there needs to be a change in awareness of training and developing high-quality human resources, considering it as the task of the whole society toward the goals of making Vietnam a strong country with “prosperous people and a fair, democratic, civilized society” helping our country not only catch up with developed countries in the world on a number of appropriate goals, but also surpass in some areas to soon become a modern industrial country.

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