

**MINISTRY OF EDUCATION
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DOAN QUANG THANG

**HUMAN RESOURCE DEVELOPMENT OF INDUSTRY
IN VINH PHUC PROVINCE**

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SUMMARY OF DOCTORAL THESIS

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Scientific Supervisor: Assoc. Prof., Ph.D. Vu Quang Tho

Reviewer 1: Prof., Dr. Sc. Nguyen Quang Thai

Reviewer 2: Assoc. Prof., Ph.D. Le Xuan Ba

Reviewer 3: Prof., Dr. Sc. Nguyen Viet Vuong

The dissertation will be presented in front of the Doctoral Dissertation Evaluation Committee at Vietnam Institute for Development Strategies.

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INTRODUCTION

1. Research rationale

Industrial development is a key factor for industrialization and modernization. Of industrial development, human resource development (HDR) is considered as a decisive factor, because the most important factor for industrial development is quality of human resources (HR). Promotion of scientific, technological knowledge and information on industrial production depends largely on development and effective use of human resources. Therefore, human resource development, especially high quality human resources, is a core requirement for industrial development.

Vinh Phuc province, located at the northern gateway of Hanoi capital, plays an important role in the national and regional economic development strategy. Economic growth of the province has always been high, and economic structure has shifted towards positive and sustainable development by increasing proportion of industry and services, while reducing proportion of agriculture. Percentage of industry in Vinh Phuc province's GDP was 49.32% in 2005, to 56.59% in 2010, and to 61.3% in 2015. Growth of production value in the period 2006-2010 was 31.4% annually. However, Vinh Phuc's industry still shows some weaknesses including: large proportion of industrial production from FDI enterprises; industrial factories uneven distributed in the province; unreasonable structure of industrial sectors. Especially, quality of human resources was unable to meet development requirements, as percentage of trained workers was only 25% in 2005, to 51.2% in 2010, and 56.4% in 2015. Labour productivity was low, and workers' behaviour unfulfilled the code of conduct. The above factors were the "*bottlenecks*" for the province's industry development.

Recognizing importance of human resource development in general as well as quality of human resources in particular, Vinh Phuc has issued and implemented several policies. However, Vinh Phuc has faced a serious shortage of workers, both unskilled and technical workers. For unskilled workers, Vinh Phuc's industrial enterprises need 20,000 workers annually for new recruitment as well as replacement. In fact, labour supply in the province is about 7,000 new workers, and 9,000 labourers who need to move out of agriculture. Of this labour supply quantity, only 40% want to work in Vinh Phuc province, and 60% go to work overseas or to other provinces such as Hanoi, Thai Nguyen. Also, Vinh

Phuc province is in shortage of technical workers and skilled workers who have experienced hi-tech industries. Meanwhile, structure of training institutions is inadequate in terms of quantity, quality, major training structure and investment. Training quality is low, and training skills are unsuitable with needs of labour used by the industrial enterprises, and unable to meet requirement of high technical workers for industrialization. Moreover, use of human resources in industrial enterprises is also unstable as salary and income is low, and working conditions are insecure, inadequate social infrastructure, less incentive for workers to maintain the jobs with enterprises. These problems need to be solved in order to develop the province industrial sector.

Therefore, "*Human Resource Development of Industry in Vinh Phuc province*" was chosen as the research topic of this dissertation.

2. Objectives

a. Overall objectives

Based on human resource development theories and previous research, the dissertation formulated a study framework of human resource development at provincial level. Data were collected, and surveys were conducted to analyse and evaluate comprehensively current situation of industrial human resource development in Vinh Phuc province, and to propose solutions for developing industrial human resources.

b. Specific objectives

- To review national and international research on industrial human resource development;
- To develop and propose theoretical and empirical background for research on industrial human resource development at provincial level;
- To analyse and evaluate current situation of industrial human resource development in Vinh Phuc province;
- To reveal limitations related industrial human resource development in Vinh Phuc province; analyse the causes of such limitations;
- To propose solutions and recommendations for industrial human resource development in Vinh Phuc province.

3. Research object and scope

a. Research object

The research object of this dissertation is industrial human resource development in Vinh Phuc province.

b. Research scope

* Spatial scope: the dissertation studied industrial human resource development in Vinh Phuc province. This study focused on workers, who were working in industrial enterprises of the province.

* Time scope: the current situation of industrial human resource development in Vinh Phuc province is covered from 2005 to 2015.

Solutions for human resource development of industry in Vinh Phuc province are proposed to 2020, and vision to 2030.

* Dissertation content: The study focuses on three major issues of industrial human resource development at provincial level, including:

- (1) Develop scale of industrial human resources;
- (2) Develop quality of industrial human resources, which is measured by physical strength, knowledge and dedication as well as occupational preparation;
- (3) Ensure reasonable structure of industrial human resources.

4. Research Methodology

a. Methodology

Dialectical materialism and historical materialism methods were employed to study objective reality in process of mobilization and development regarding time, specific historical conditions.

b. Specific research methods

Statistical methods, description: Data were collected from the People's Committee of Vinh Phuc Province, Statistics Department, Department of Education and Training, Industrial Park Management Board and Export Processing Zone in Vinh Phuc province. The dissertation also used a number of previous research papers and academic reports related to human resource development of Vinh Phuc's industry, such as books, journals, internet and workshop reports as supplement information and data.

Methods of analysis, synthesis, comparison, comment: Data and documents are synthesized and processed, then to compare and comment in order to clarify current situation of industrial sector in Vinh Phuc province as well as causes affecting to the provincial industrial development.

System analysis method: The study used systematic analysis method to synthesize research problems and form logical thinking for answering research questions.

c. Data and information collection

* *Secondary information*: Searching from published scientific works, dissertations, publications of books, magazines, scientific records, statistics of management agencies. Especially, the statistical data of Vinh Phuc People's Committee, Statistical Office, Department of Education and Training, Management Board of Vinh Phuc industrial zones.

* *Primary information*: Collected by conducting surveys, interviews, and field observations. The study objects include:

First, industrial enterprises in Vinh Phuc province. Respondents to prepared questionnaires were personnel managers of the entities: owners/directors, deputy directors, as well as head of human resources who were full-time or part time personal managers.

Second, employees who were working in the province's industrial enterprises.

Third, state management officials such as cadres, employees of the Department of Labour, Invalids and Social Affairs, officials of the Department of Education and Training, management staff and teachers of training institutions and vocational schools.

Survey methods are presented in Appendix 4.

d. Information processing methods

Secondary information was collected, analysed, and filtered to form scientific arguments in response to research questions.

Primary information, which was collected through the prepared questionnaires, was entered, processed and analysed by using the SPSS software. Also, in-depth interview information was synthesized and analysed according to the research topics.

5. The dissertation's new contributions

a. Theoretical contribution

The study sheds a light on theoretical issues about industrial human resource development of a province. These theoretical issues are formulated systematically and logically based on theoretical foundations of many disciplines as a foundation for research on industrial human resource development in Vinh Phuc province.

b. Empirical contribution

Experiences related to industrial human resource development from several countries were discussed, and experiences from some localities,

which had similar socio-economic characteristics to Vinh Phuc province, were also analysed. From the discussion and analysis, lessons learnt have been drawn for a province in general.

The study analysed and evaluated current situation of industrial human resource development, and factors affecting industrial human resource development in Vinh Phuc province.

Surveys were conducted to collect feedbacks of the workers who were working for industrial enterprises. The information was used to evaluate the current situation of industrial human resource development as well as to analyse the factors affecting industrial human resource development in Vinh Phuc province.

The dissertation has pointed out shortcomings, causes and problems of Vinh Phuc's industrial human resource development in the new context: (i) encouraging profound development of science and technology; (ii) enhancing international economic integration and (iii) boosting high value-added industries to promote the socio-economic development of Vinh Phuc in the coming years.

This study has proposed solutions for industrial human resource development in Vinh Phuc province to 2020, vision to 2030. The proposed solutions were based on the view that industrialization of the industry is the core solution for the industrialization and modernization of the province because the province industry contributed the largest proportion of its GDP.

From theoretical and empirical studies, this dissertation can be used as a research reference for researchers or policy makers whose are working in the fields related to industrial human resource development.

6. Theoretical and empirical significances of the dissertation

For theory, the dissertation has completed and reinforced the theoretical framework for industrial human resource development at province level.

For empiric, the dissertation has studied and surveyed current situation of industrial human resource development in Vinh Phuc province and established the solutions to develop human resource of industry in the province.

7. The dissertation structure

Apart from introduction, conclusion, recommendation, and references, the dissertation is divided into 4 chapters, 15 hours.

CONTENTS OF THE DISSERTATION

Chapter 1 LITERATURE REVIEW ON INDUSTRIAL HUMAN RESOURCE DEVELOPMENT

1.1. Studies of international researchers

Regarding industrial human resource development, several international researchers have been working on this topic. The research was divided into groups: (i) Research on human resources and human resource development; (ii) Research on industrial human resource development.

Studies on human resources are broadly based on three major themes: (1) human as a resource for socio-economic development; (2) human as human capital; (3) human as working capacity. Meanwhile, research on human resource development has been reviewed into two fronts, constituents and roles of human resource development.

There is limited research on human resource development for industry, and most discussions have focused on specific industrial sectors which present current situation of human resource development and factors affecting human resource development of the specific industrial sectors. Based on that, the research proposed measures for developing human resources for the mentioned industrial sectors.

1.2. Studies of domestic authors

The author has analysed and evaluated the works, books, newspapers, research topics, dissertations of Vietnamese researchers. Discussions by domestic authors can be classified into two major topics:

- (1) Human resources and human resource development;
- (2) Human resource development for industry.

Domestic researchers have been aimed at clarifying the nature, role and content of human resource development; roles of education and training in human resource development, role and relationships between human resource development and socio-economic development. However, there is no research on human resource development at provincial level. The discussions focused on concepts, contents, and evaluation criteria on

human resource development, which are unclear and unorganised. This is a theoretical need for the author to continue in this dissertation. In addition, there is unavailable study on Vinh Phuc province's industry, which is closely linked to the province's objectives, advantages as well as development potential.

1.3. Research direction of the dissertation

The theoretical gaps to be further studied are:

Firstly, in terms of theoretical research, there are several related papers, but it seems that those papers ignored human resource development for industry at local level. Theoretical gaps of human resource and human resource development need to be filled, including: clarification of concepts; content, evaluation criteria and factors affecting provincial and municipal (provincial) industries.

Secondly, the previous authors focused on human, human resources (mental, physical, devoted factors), structure of human resources, but those authors did not mention or study details of human resource development activities (training in the industrial sector, industrial human resource usage, working condition improvement, healthcare) and willingness of human resources to adapt to changes in economic economics in the future.

Thirdly, although researchers confirmed that human resource development is to develop scale, structure and quality of human resources, future preparation and effective use of human resources are still unclear and lack of evaluation criteria for human resource development. Most authors analysed in depth mental, physical, devoted or moral qualities, working style, but overlooked analysing and forecasting professional skills for future changes.

Fourthly, for empirical discussions, there is unavailable study about human resource development of Vinh Phuc's industrial sector to explain and evaluate the real situation of the province. There is a need to have feasible measures for human resource development of Vinh Phuc's industry based on the current situation. Therefore, the author hopes that the topic, "*Human Resource Development of Industry in Vinh Phuc province*", will contribute to the clarification of theoretical foundations, lessons learned; evaluate the current situation of industrial human resource development and propose solutions for developing industrial human resources in Vinh Phuc province.

Chapter 2

THEORITICAL AND EMPRIICAL LITERATTURE ON INDUSTRIAL HUMAN RESOURCE DEVELOPMENT AT PROVINCIAL LEVEL

2.1. The basic concepts

2.1.1. *Human resource development*

***Human**: Human is considered in two respects; human as an *individual* resource, and human as a combined-resource in which a *group of people* connect together in certain structures. However, the understanding of human resources as a group of people is more widely used in most studies. That is also the approach that the author uses in this dissertation. Thus, in view of this study, *human resource is the sum of the resources of specific people involved in working processes, including physical, mental and devoted factors.*

There are many different concepts of human resource development. Within the scope of the dissertation, industrial human resource development is approached following direction of human activities of an economic sector - industry; including industrial production and business establishments (mainly private enterprises). In terms of scope, it is human resource development of a province, and the major study entity is the provincial government. Therefore, *human resource development is an increase in scale, quality improvement and positive change in human resource structure to ensure the professional development for employees that meets current and future requirements which follow development direction.*

Implications of the *human resource development concept* include: (i) it is a process of increasing scale, enhancing quality and positively transforming human resource structure to meet future industrial development needs; (ii) human resource development aims to provide vocational training for the workers that meet demands and requirements of future jobs. Main functions of human resource development are: (i) quantity development of industrial human resources; (ii) quality development of industrial human resources; (iii) ensuring reasonable industrial human resource structure; (iv) ensuring future human resource and industrial development; and (v) ensuring occupational training development for individual workers.

2.1.2. Industrial human resource development

2.1.2.1. Industry

Industry is a group of enterprises, which involve in productive activities in the industry. Revenue from industrial business activities of these enterprises accounts for over 50% of total revenue from all business activities. The enterprises include individual business households, handicraft production establishments, or private enterprises.

2.1.2.2. Industrial human resource development

Industrial human resource development is the human resource development that meets requirement of industrial enterprises. *Industrial human resource development is understood as an increase in scale, improvement in quality and positive changes in human resource structure to ensure professional development of the employees that meets the current requirements and future requirements of the jobs following development direction.* Industrial human resource development includes the following basic contents: Increasing industrial human resource scale; improving quality of industrial human resource; ensuring industrial human resource structure. In the process of industrial human resource development, it is necessary to pay attention to characteristics of industry and industrial human resource in order to ensure efficient use of human resource in the industry and development of professional training for individual workers.

2.2. Contents of industrial human resource development at the provincial level

2.2.1. Scale development of industrial human resources

Scale development of industrial human resources is to provide sufficient quantity of industrial human resource for the need of industrial development. At the macro level, scale development of human resource depends on population growth rate, health care and public health measures, and quality of education system. As characteristics of industrial production, it needs the workers either physical strength for mining industry, construction or with qualification, skill and persistence. For that reason, increase in scale of industrial human resources requires parallel measures, health and technical skills. Movement of labour from agricultural production to industrial production is a popular trend in many countries during industrialization. However, this process should be implemented in parallel with the process of human resource development training, especially training attitude and

discipline of the workers. Robust development of labour market creates a shift of labour among economic sectors and localities. This is both an opportunity and a challenge for localities in scale development of industrial human resource, which requires more attention from localities to stabilize their work, income and living conditions.

2.2.2. Quality development of industrial human resources

In essence, quality development of industrial human resources is to improve quality of industrial human resources that meets requirements of industrial development. The quality of human resource is internal factors of human resources that make up working capacity, including the physical, mental and devoted factors of the workers.

2.2.2.1. Improving physical strength of industrial human resources

Physical improvement includes enhancing muscle health and improving flexibility of nervous system, enhancing power of the mind and the will, mobility of the intellect. Of which, the most important thing is to enhance the flexibility of mental activity, mental mobility of the workers. For industrial sectors, especially mining industry, improvement of health and physical fitness is important because of the characteristics of modern industrial production: high value machines and equipment; high product value, difficult to repair if damaged; profound specialization makes the jobs boring.

Physical strength of industrial human resources includes: (i) development of height and weight of industrial human resources and (ii) improvement of workers' health.

2.2.2.2. Enhancing intellect of industrial human resources

Improving intellect of industrial human resources is to raise the intellectual level of the workers, including level of general education, technical qualifications, skills and working experiences. In industrial production, the foundation for applying technology is to improve qualifications, skills and experiences of human resources. Application of science, technology and advanced technology to production will reduce the demand for manual labour, but it requires higher levels of technical and professional skills of human resources. Therefore, intellectual improvement of human resources has become an urgent need to increase international competitiveness of industrial enterprises. Having good human resources is a necessary condition for the enterprises to apply scientific and technological advances in production. It is also the source of creativity, to create new

products with high quality and technological advance to compete in markets. Improving intellect of industrial human resources is to improve level of general education, qualification, skills, working experiences.

2.2.3. Ensuring reasonable structure of industrial human resources

Structure of human resources is a socio-economic terminology, reflecting internal structure of entire human resources, and correlation between the divisions and relationships among those divisions in total human resources. Characteristics of the human resources structure is the ratio of number of employees by criteria: age, sex, level of education, by sector/economic sector, distribution by region. Irrationality of human resource structure can cause wastage of using human resource, so that maintaining a rational structure is of great significance for both enterprises and industry or national and regional territories. From the author's point of view, no human resource structure is considered reasonable for all enterprises, sectors or countries, and a rational structure must be associated with each organization, sector, country or region. Human resource structure is considered appropriate if it is consistent with the objectives of economic actors.

2.3. Factors affecting industrial human resource development at provincial level

Subjective factors include: industrial development policy of a province; size and quality of population; training and supply capacity of vocational training and training institutions; economic growth; development of health care system; and human resource employment of industrial enterprises.

Objective factors include: international integration; science development, technique and technology; restructuring of Vietnam's industry; and ability of industrial enterprises to participate in GVCs; labour market of industry.

2.4. Criteria for assessing industrial human resource development of a province

Criteria for evaluation of HRD in industrial enterprises include:

* *Criteria for assessing scale development of industrial human resources*, including: number of industrial workers in a province; ratio of industrial workers to population size, population in working age; ratio between regular and irregular industrial workers. In this dissertation, the author uses quantitative indicators, industrial human resource ratio comparing to population size and to working-age population for assessing scale development of human resources.

* *Criteria for evaluating quality development of industrial human resource* include indicators for assessing physical strength of industrial human resources; indicators for assessing intellect of industrial human resources; indicators for assessing working capacity of industrial human resources.

* *Criteria for evaluating reasonableness of industrial human resource structure.* Indicators for evaluating reasonableness of industrial human resources structure used in this dissertation include: age sex, qualification and skills, region, types of enterprise, and business sector. Rationality of each type of human resource structure depends on characteristics of specific enterprises as well as the business sectors.

2.5. Experiences in industrial human resources development

Throughout this dissertation, the author has studied experiences of some provinces from several countries such as Singapore, Korea, China, Thailand, Malaysia, India, Japan... In addition, the study also analysed experiences of some localities which had similar socio-economic characteristics such as Dong Nai and Binh Duong province. Based on these experiences, it is possible to draw some lessons learned for Vinh Phuc as well as for private enterprises in Vinh Phuc, in particular human resource development for industrial enterprises.

First, it is necessary to focus on education and training for human resource development of industrial enterprises in the province. Vinh Phuc needs to develop an education strategy, which is suitable for the province development and trend of global economic development. In this strategy, it is necessary to invest resources for education and training system of Vinh Phuc in order to improve the provincial industrial human resources.

Second, it is necessary to focus on improving scientific research and application of science and technology of industrial enterprises based on scientific and technological development, and industrial human resource development. Industrial enterprises need to cooperate with training organizations, universities and research institutes domestically and abroad to conduct research and application of science and technology into the enterprises' production process. Moreover, development of research and scientific and technological application promotes industrial human resource development of the province.

Third, there should be a policy that attracts and uses high quality human resource in Vinh Phuc province. The province needs to receive excellent students from universities and institutes throughout the country, to attract

high quality students from other provinces, regions and abroad to work in Vinh Phuc. To this end, Vinh Phuc provincial government as well as industrial enterprises need to create good living and working conditions for high-quality human resources by implementing policies on salaries, welfares, working conditions, accommodations and better welfare for industrial workers.

Fourth, it is necessary to promote the role and responsibility of enterprises in industrial human resource development. It needs to promote propaganda, so that enterprises are aware of the important of human resource development in their business, promote production development and improve product quality. Enterprises need to be aware of human resource development as one the most important tasks to their businesses.

Fifth, attention should be paid to financial support and encourage industrial workers to continuously improve their education. Meanwhile, it is important to provide corresponding development opportunities for workers in industrial enterprises. The enterprises should commit to workers the job opportunities after training, ensure stable employment for the employees, encourage material and spiritual, attach importance to promotion of qualified people. By doing so, the employees will work hard, improve working methods, and boost profits.

Chapter 3

CURRENT SITUATION OF INDUSTRIAL HUMAN RESOURCE DEVELOPMENT IN VINH PHUC PROVINCE

3.1. Basic socio-economic development and industrial characteristics of Vinh Phuc province

3.1.1. Socio-economic development characteristics

In this part, the author analysed the socio-economic characteristics of Vinh Phuc province, from the analysis, the author has pointed out potential as well as difficulties and challenges in industrial development of the province.

3.1.2. Characteristics of industrial enterprises in the province

In 2005, there were 697 industrial enterprises in Vinh Phuc province. In 2015, the number of industrial enterprises in Vinh Phuc province increased by four folds. The provincial enterprises have some characteristics as follows:

- Increase in the number of industrial enterprises;
- Non-state-owned enterprises made up high proportion of total provincial industrial enterprises;

- Vinh Yen, Binh Xuyen and Phuc Yen are major industrial centres of the province;

- Manufacturing industry accounted for large proportion of industrial structure;

- Majority of the provincial industrial enterprises are small size.

3.1.3. Production and business characteristics of industrial establishments in Vinh Phuc province

In this part, the author has analysed and clarified the basic characteristics, including: investment attraction of provincial industrial enterprises; industrial production value of industrial enterprises; and profitability of industrial enterprises.

3.2. Analysis of industrial human resource development situation in Vinh Phuc province

3.2.1. Scale development of industrial human resources

For overall of the province's industry, this was a rapid growth in scale of human resources. In 2005, there were 24,326 people working in industrial enterprises of the province. In 2015, the number of workers were 72,699 people, and the average growth rate was 11.8% annually. In the period of 2005 - 2015, the number of industrial workers increased 4.9112 people annually. Although the provincial population has increased, industrial enterprises of Vinh Phuc were lack of industrial workers. The industry of Vinh Phuc contributed over 60% of the province's GDP, but it only employed 12% of the labour force, indicating that industry was an efficient sector of the province's economy. Regarding owners of industrial enterprises, scale of human resources from state-owned enterprises decreased as proportion of state-owned enterprises reduced.

Manufacturing and processing enterprises were the highest number, so proportion of industrial workers in those sectors also accounted for the largest share. Currently, Vinh Phuc's industry is in shortage of workers in all sectors at all skills. Of which, high-skilled and high-qualified workers are the among the most.

3.2.2. Quality development of industrial human resource development in Vinh Phuc province

3.2.2.1. Physical development of industrial human resources

According to the author's survey, majority of workers in industrial enterprises of Vinh Phuc province were aged from 25 to 44 years old. These people were good health and fitness to meet requirements of industrial

working. Proportion of labour aged 15 to 34 accounted for 66.9% of total labour force (in 2015). Average height of both male and female workers was higher than the average of Vietnamese ones. In 2015, average weight of male workers was 57.6 kg, while women weight was 48.5 kg. The BMI indicator of men was 20.72 and women was 19.8. These indicators met requirements of the industrial enterprises.

The most remarkable point was about health and physical strength of the workers. It was evidenced that there was low number of sick leave days per year. In 2015, the number of sick days was average of 2.47 days /person /year, while this figure in 2010 was 2.9 days /person /year. The number proved that health and physical strength of workers tend to go up, and industrial workers limited their leave due to health reasons. It can be said that industrial enterprises have paid more attention to health and health care, better health-checks, improving working conditions for industrial workers.

3.2.2.2. Intellectual development of industrial human resources

** General education level of industrial human resources*

According to the survey, 73.8% of workers graduated from high school; 25% graduated from junior high school, and only 1.2% graduated from primary school. For high school graduation group, percentage of male workers was lower than that of female workers.

** Qualification of industrial human resources*

In terms of technical qualification, workers with primary level accounted for 21.2%; vocational secondary school, professional secondary school accounted for 16.3%; colleges accounted for 10.1% (including vocational colleges), universities accounted for 17.2%; university graduates (masters and doctors) accounted for 1.3%, and the remaining of workers who were unemployed or without any certificate or diploma. Thus, it can be seen that the technical qualification level of the industry in Vinh Phuc was low. There was a serious imbalance between different levels of technical qualification that was unable to meet requirements of industrialization and modernization.

Changes in human resource quality according to education level were relatively slow, and the most significant changes were unskilled group to primary, secondary, vocational and college. Proportion of human resource with undergraduate and postgraduate and professional colleges was almost unchanged over the study period.

** Skills and experiences of industrial human resources*

Although occupational skills are the core components of labor productivity and job performance, occupational skills of the Vinh Phuc industrial workers were the weakest among all indicators reflecting quality of human resources. Technical skills of human resource quality were highly valued; however industrial enterprises need to invest more on training these skills. In addition, workers in Vinh Phuc's industrial enterprises had limited working experiences. This is due to the fact that high proportion of workers were new participants in labour market, so they were lack of working experiences. Also, working experiences in different positions were different, with the number of workers leaving work and working in the province were high, so the ability to accumulate experience was limited. This has also created barriers to improve human resource quality for industrial enterprises in two fronts, technical and vocational skills; attitude and discipline of the workers.

3.2.2.3. Dedication of industrial human resources

Majority of industrial workers were farmers, who came from agriculture or rural areas. These workers have low morale and untrained working disciplines. Therefore, working discipline and style of the workers were unprofessional. Although human resources of Vinh Phuc province has endowed valuable qualities such as diligence, hard-work, working passion, but when changing from agriculture to industry, many workers are difficult to adapt to strict working regulations. Moreover, a large number of workers are from the midland and mountainous areas where education is limited, so some workers disobeyed working disciplines of industrial enterprises.

Moreover, the workers are lack of living and working skills in industrial environments as well as awareness of working relationship. Although socio-political organizations of Vinh Phuc province have been very active in disseminating awareness, attitude, behaviour and working discipline to young people, the changes have been insignificant. For foreign direct investment enterprises, the workers were unable to understand culture and customs of foreigners, who worked together. This caused conflicts and discord, as well as misunderstood the relationship between the owners of industrial enterprises and workers.

** Preparation of skills, professional expertise*

For industrial human resource of Vinh Phuc province, preparation of skills, professional expertise for the future is very important for the following

reasons: (i) occupation for the future as an indispensable condition for provincial industrial development; (ii) complicated labour market contexts of Vinh Phuc province that need to develop skills and professional expertise for the future. As the result, the workers become more attached to Vinh Phuc and readiness for future jobs. This is one way of coping with shortage of industrial workers. However, according to the author's survey, the implementation by industrial enterprises have many weaknesses, namely:

First, industrial enterprises avoid training to have better human resources for their businesses. *Second*, strategic planning of human resources in industrial enterprises was weak. The industrial enterprises were unable to forecast demand for future human resources, in terms of scale, quality and structure. Thus, there was unavailable measure to prepare future professional skills. *Third*, non-state enterprises made up a large portion of the province's industrial enterprises, but most enterprises were small scale. For that reason, investment in education, training and industrial human resource development was limited. *Fourth*, small number of workers in industrial enterprises were aware of the need to learn and improve their skills. *Fifth*, perception of the business owners, senior executives on changes in business environment in the long term was limited. Weakness in preparation of future professional skills for the workers is not only for industrial human resource development of industrial enterprises in Vinh Phuc province, but also for all Vietnamese enterprises in general. At macro level, industrial human resource development has been poorly implemented, so there was a shortage of workers. Training was unable to meet the demand that brought about low quality of human resource. At enterprise level, due to lack of professional skills and future preparation, enterprises were unable to employ good human resources as expected. Few companies in Vietnam are able to cope with large fluctuations in labour market.

3.2.3. Structure of industrial human resource in the province

The dissertation analysed and clarified the shortcomings of Vinh Phuc's industrial human resource structure, including human resource structure by age, gender, business sector, and administrative boundaries.

3.3. Current situation of major factors affecting industrial human resource development in the province

In the dissertation, the author focused on analysing the current situation of factors affecting Vinh Phuc's industry, including:

- Industrial human resource development policies of the province,
- The supply capacity of vocational training and training institutions in the province,
- Socio-economic development of the province,
- Development of healthcare system in the province,
- Actual employment of human resources in industrial enterprises: wages and incomes of workers; improvement of working conditions and environment in enterprises.

3.4. A general assessment of industrial human resource development situation in Vinh Phuc province

This part summarised advantages and disadvantages in Vinh Phuc province's industry, focusing on four advantages and eight limitations. In order to have foundations for proposing human resource development solutions, the dissertation has analysed the causes of these advantages and limitations, including subjective causes and objective reasons.

Chapter 4

SOLUTIONS FOR INDUSTRIAL HUMAN RESOURCE DEVELOPMENT IN VINH PHUC PROVINCE

4.1. Socio-economic contexts and orientation for human resource development in Vinh Phuc Province

4.1.1. Socio-economic context

In this part, the dissertation analysed global economic setting, socio-economic context of Vietnam and requirements for industrial human resource development in Vinh Phuc province.

4.1.2. Industrial development orientation

In the period of 2016-2020, Vinh Phuc province must have basic elements of an industrial province. Industrial development priority of Vinh Phuc province this period should focus on electronics and informatics industries as the top priority, following by mechanical engineering, building materials, agro-forestry and fishery processing, food, textiles, footwear... Based on that, Vinh Phuc needs to develop appropriate solutions and policies for industrial human resource development to develop industry as well as socio-economic development.

4.1.3. Development orientation of industrial human resource in Vinh Phuc province

4.1.3.1. Development objectives

Overall development objective is to develop the human resources, which are suitable with development requirements of industrial enterprises in the context of international competition. Human resources ensure service provision, social management, national security, defence in the contexts of rapid technological progress and internationalization and complicated international situations.

It needs to develop human resources with high professional qualifications, good moral character, good personality, professional style, high professional capacity, skilfulness, dynamism and creativity in order to well perform the role of Vinh Phuc province as a major industrial centre of the country.

Specific objective is to ensure sufficient quantity, structure and needed quality of industrial human resource in Vinh Phuc province. In particular, attentions will be paid to quickly increase the percentage of trained workers to 55% in 2020 and 70-75% in 2030, to enhance working attitudes in industrial working environments.

** Forecast of industrial human resource demand*

According to the master plan for socio-economic development of Vinh Phuc province up to 2020, orienting to 2030, forecast of labour demand and balance of labour resources for each sector by 2015 and 2020 as follows.

Table 4.1: Forecast of labour and labour employment in Vinh Phuc province by 2020

TT	Sector	2005	2010	2015	2020
1	Labour force (1000 people)	675	737	850	967
2	Population in working age (1000 people)	650	718	822	943
3	Employment structure (%)	100,0	100,0	100,0	100,0
3.1	<i>Agriculture, forestry and fishery (%)</i>	59,2	46,4	30	19
3.2	<i>Industry and construction (%)</i>	16,4	25,5	36	43
3.3	<i>Service (%)</i>	24,4	28,1	34	38

For quality of industrial human resources, percentage of trained human resources in industry and construction will increase from 69% in 2010 to 73% in 2015 and 80% in 2020. In industrial sector, the percentage of trained workers will increase from 80% in 2010, 86% in 2015 and 94% in 2020, of

which: the primary job level in 2015 was 59.94% and in 2020 will be 56.25%; secondary vocational training in 2015 was 22.86% and in 2020 will be 29.94%; professional level in 2015 was 7.39% and in 2020 will be 5.72%; vocational training in 2015 was 1.24% and in 2020 will be 3.05%; the professional degree in 2015 was 2.41% and in 2020 will be 1.79%; undergraduate and postgraduate degrees in 2015 was 7.17% and in 2020 will be 5.84%.

** Viewpoint of industrial human resource development*

First, industrial human resource development in Vinh Phuc province must meet sufficiently and timely demands on quantity, structure and quality of human resources for the industrial enterprises.

Second, industrial human resource development in Vinh Phuc province must have a long-term vision, development strategy and appropriate steps to meet development requirements of industrial enterprises. This is the foundation for Vinh Phuc to develop its industry in the future, making Vinh Phuc as an industrial province toward modernization.

Third, industrial human resource development in Vinh Phuc province must focus on developing and forming high-quality human resources to meet requirements of fast and sustainable development; to meet requirements of developing knowledge economy, developing science and technology.

Fourth, industrial human resource development in Vinh Phuc province must be related to requirements of international integration and competitiveness of industrial enterprises. Vinh Phuc's industrial enterprises are part of Viet Nam's industrial production value chain and the global industrial value chain.

Fifth, industrial human resource development in Vinh Phuc province is responsibility of the entire political system, the whole society, enterprises and employees of the province.

4.2. Solutions for industrial human resource development in Vinh Phuc province

4.2.1. Promote training activities

First, vocational training policy for human resources in Vinh Phuc industrial enterprises needs to be improved in order to expand the scale, training structure, training level structure, and improve the quality of vocational training. Training policy of Vinh Phuc needs to be renewed and improved along with *privatizing public training institutions and renovating education and training*.

Second, training must be based on needs of industrial enterprises, linking between activities of training institutions and labour employment of industrial enterprises, in order to meet requirements about quantity and quality (knowledge, skills, professional culture...) and structure of human resources.

Third, training human resource in enterprises should be encouraged. The industrial enterprises in Vinh Phuc province should actively train their workers in line with the firms' strategy of human resource development and sustainable development of enterprises. As a basic step, industrial enterprises should make a good human resource planning with clear targets to 2020 and further vision, from which industrial enterprises identify needs, and then develop training programs.

4.2.2. Develop labour market in Vinh Phuc province

Developing labour market in Vinh Phuc province is to solve shortcomings in the province: shortage of workers in industrial enterprises, including the quantity and quality of human resources; unbalance of labour supply and demand; the inadequacies of wages, income and working conditions of workers; poor performance of market intermediaries. At the same time, the supply-demand balance of labour forces to raise salary and income of workers; develop social infrastructure outside the industrial zones, thereby improving the material and spiritual life of workers, limiting labour movement. To develop the labour market, Vinh Phuc province should:

First, labour market institutions need to be improved.

Second, high-skill labour market in Vinh Phuc province needs to be developed.

Third, infrastructure of the labour market in Vinh Phuc province should be built and developed.

4.2.3. Improve material and spiritual life for workers in Vinh Phuc's industrial enterprises

Implementing this solution aims to:

(i) wages, incomes for workers in industrial enterprises need be increased; (ii) living standards, health care conditions, health, education and spiritual well-being for workers inside and outside industrialized enterprises need to be improved; (iii) The working conditions of industrial enterprises must be improved in order to ensure the health and fitness of workers and labour towards the sustainable development of human resources in the

industry. (iv) Employees should be motivated actively to work, learn and create for development of enterprises as well as the workers themselves; (v) brain drain needs to be prevented, and skilled workers should be encouraged to work in Vinh Phuc province.

To achieve the goals,

First, income should be raised;

Second, social welfare of industrial sector in Vinh Phuc province needs to be ensured;

Third, working conditions in enterprises should be improved;

Fourth, labour relations should be built in harmony, stability and progress in enterprises in Vinh Phuc province

4.2.4. Propagandize, educate professional ethics, working style for industrial workers in Vinh Phuc province

First, communication program needs to be developed and implemented.

Second, propaganda and education activities should be linked to the training programs of enterprises in Vinh Phuc province.

Third, professional ethics, working style should be built and enhanced in association with building corporate culture.

4.2.5. Develop high quality industrial human resources in Vinh Phuc province

First, talents, high quality human resources should be attracted to work for industrial enterprises in Vinh Phuc province.

Second, high quality human resource structure should be developed for the Vinh Phuc industry.

Third, criterion for evaluating high quality human resources in industry in Vinh Phuc province needs to be set up as a benchmark for training, recruitment and evaluation.

4.2.6. Raise awareness and responsibility of enterprise owners and employees on human resource development in Vinh Phuc province

First, awareness and responsibility of enterprise owners need to be improved, including:

- Human resources development strategy for the period up to 2020 and foresight should be developed and implemented; The annual and five-year plans on human resource development in overall production and business plan of industrial enterprises should be formulated.

- Human resource training programs, especially high quality human resource training, should be developed and implemented or cooperated.

- It is necessary policies for industrial human resource development which human resources of enterprises are invested and used effectively, treated well, improved working conditions, life, material and spirit. All workers of an enterprise should be given opportunities equally to advance in their careers.

Second, awareness and responsibility of workers are enhanced, including:

- Based on the advice and profession orientation, workers choose their own job to learn in order to meet needs of labour market and industrial enterprises, so that they have opportunities to work for industrial sector in Vinh Phuc province.

- Workers are willing to participate as a source of "labour supply" in the market of Vinh Phuc province to meet the requirements of industrial enterprises. They freely choose a work, find a job, where they work.

- While working, workers should have good attitude and responsibility to work productively and produce high quality and high value-added products. Employees need to regularly learn, foster, accumulate experience to improve their knowledge, develop professional skills and train professional ethics, working style to match requirements of modern industry throughout their working life (lifelong learning).

- Workers should actively participate in building harmonious, stable and progressive industrial relations in industrial enterprises, building a culture of safety, professional culture and corporate culture, contributing to sustainable business development.

4.3. Some recommendations

In order to effectively implement the above solutions, the author of the dissertation proposes some proposals to the Government, the Ministries, the Vinh Phuc provincial Party Committee and the People's Committee of Vinh Phuc province.

CONCLUSIONS

The dissertation has focused on the following issues:

Theory on industrial human resource development in Vinh Phuc province was systematized. Based on analysis of specific characteristics of

industrial enterprises, the author has pointed out the specific characteristics of industrial human resource development, from which the author developed a theoretical framework for industrial human resource development.

The dissertation searched for and analyses the experiences of human resource development in some countries, provinces and some enterprises which have similar conditions and development objectives to Vinh Phuc province in order to draw lessons for industrial enterprises of Vinh Phuc province.

As one of specific objective, the study presented an overview of industrial enterprises in Vinh Phuc province. The discussions focused on scale development, structure of human resource in relation to the structure of investment and investment efficiency of industrial enterprises.

Various research methods rich sources of data were used to analyse the current situation of industrial human resource development in Vinh Phuc province. Situation of industrial human resource development in Vinh Phuc province was divided into five subtopics: (i) Scale development of industrial human resources; (ii) Quality development of industrial human resources; (iii) Structure of industrial human resources; (iv) Preparation of skills and professional expertise; (v) Activities of industrial human resource development.

The dissertation has analysed and explored industrial development orientation of Vinh Phuc province as a basis for proposing solutions for industrial human resource development in Vinh Phuc province.

Six groups of solutions have been proposed to develop industrial human resources in Vinh Phuc province, which aim at solving shortcomings and limitations in terms of scale, structure and quality of human resources of industrial enterprises in the province.

Therefore, the dissertation has achieved the research objective. The author hopes that the scientific values of the dissertation will be important references for enterprises in actual training, attraction and employment of industrial workers; universities and research institutes for research and data search; especially for the authorities and departments of Vinh Phuc province in advising, planning and developing provincial policies on labour, employment and industrial development in the province.

**LIST OF SCIENTIFIC WORKS PUBLISHED BY AUTHOR
RELATED TO THE THESIS TOPICS**

1. Doan Quang Thang (2015), "Human Resource Planning in Vinh Phuc Province's Industrial Enterprises - Status and Suggestions", *Journal of Vocational Education*, (21), p. 22-26.
2. Doan Quang Thang (2015), "Promoting the formation of industrial enterprises in Vinh Phuc province", *Journal of Economics and Forecasting*, (7), p. 15-17.
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