

**Master's Thesis**

**Main Factors Affecting the Effectiveness of**

**the Dual Vocational Education and Training System**

**in Vietnam in terms of Business Association**

by

BUI Thi Thanh Van

51219627

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## **CERTIFICATION PAGE**

I, BUI THI THANH VAN (Student ID 51219627) hereby declare that the contents of this master's thesis are original and true, and have not been submitted to any other university or educational institution for the award of degree or diploma.

All the information derived from other published and unpublished sources has been cited and acknowledged appropriately.

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BUI, Thi Thanh Van

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## ABSTRACT

The Vocational Education and Training (VET) system of Vietnam has been developing strongly in recent years, particularly from 2015, while the shortage of skilled laborers has always been a difficult challenge for the country. Considered as a bridge connecting manpower and the labor market, VET has been employed with a voluminous series of reform policies implemented by the government and vocational institutions nationwide, and the adoption of the German Dual VET model has been recognized as the most significant and promising effort. Dual VET is not a new or attractive theme for the researchers. However, it is a crucial topic to explore, particularly for the individuals and organizations relevant to occupational learning and training. In the current context of globalization and industrialization, Vietnam and other Global South countries now require high-quality human resources more than ever. An industry-led direction must be followed for most vocational institutions to reach sustainable development, and thus, developing and maintaining close relationships with enterprises are significantly important. By far, the majority of VET-related studies have provided overall scenarios on Vietnam's VET in terms of statistics and general reform suggestions, and not thorough investigations of the real implementation of Dual VET in vocational institutions and factors affecting its effectiveness. To overcome this gap, this research aimed to answer two questions: (1) To what extent does the number of affiliate enterprises affect the effectiveness of Dual VET in Vietnamese vocational colleges? and (2) How effective is on-the-job (OJT) training of the Dual VET system toward enhancing the qualification of Vietnamese workers?



Research samples involve typical VET-related individuals in Vietnam including vocational students and educators or staff in charge of business association in Vietnamese vocational colleges and the employers/managers at affiliate enterprises. Under the mixed method approach, two sets of data, including quantitative and qualitative data, were triangulated in the framework of the convergence model of analysis. By investigating 570 vocational students at six vocational colleges through online questionnaires and 17 online semistructured in-depth interviews from vocational colleges and enterprises in three regions of Vietnam, this research explored the real status of the job-oriented training model in most of Vietnamese vocational colleges and yielded the following primary findings: (i) most of the sampled vocational students did not have positive feedback toward the OJT programs they have undergone; (ii) a higher number of partner enterprises indicates the better quality of OJT; and (iii) a high-quality OJT program is a key factor in facilitating the sustainable development of the Dual VET system in Vietnam.

## LIST OF ACRONYMS

ADB:	Asian Development Bank
DVET:	Directorate of Vocational Education and Training
FDI:	Foreign direct investment
GIZ:	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (in English approximately: “German Society for International Co-operation”)
GOVET:	German Office for International Co-operation in Vocational Education and Training
HVCT:	Ho Chi Minh Vocational College of Technology
HYUTE:	Hung Yen University of Technology and Education
JICA:	Japan International Co-operation Agency
MoET:	Ministry of Education and Training
MoLISA:	Ministry of Labor, Invalids and Social Affairs
OECD:	The Organization for Economic Co-operation and Development
OFF-JT:	Off-site job training
OJT:	On-the-job training
TEC:	Technical and Economic College of Kien Giang province
VET:	Vocational Education and Training

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## **CHAPTER I. INTRODUCTION**

This chapter opens the study with general information regarding Vietnam's education system, Vietnam's Vocational Education and Training (VET) and Dual VET development, and the current situation of skilled labor shortage. It further presents the rationale and justification of the research.

### **1.1. Vietnamese education system after Doi Moi policies**

Doi Moi, the renovation policies launched in Vietnam in 1986, has brought about numerous profound changes to the country, particularly in the higher education and VET system (Hong, 2009). From a country on the brink of economic collapse, Vietnam has revived itself and is now on a path toward economic prosperity, industrialization, and globalization. After the renovation, the academic education has been preferred to vocational training, as shown in terms of both quantity and quality (Trines, 2017). The Vietnamese national education system after the Doi Moi Reform has consisted of two types: academic and vocational training. The highest levels of training are conducted at universities and vocational colleges. In reality, the numbers of vocational schools and its students have always been in decline, and the community has been more attentive toward and interested in academic education institutes, such as universities and colleges, rather than in vocational training because of a common belief that vocational graduates would have fewer job opportunities than academic graduates. Moreover, when the foreign investment came to Vietnam, the higher education was unable to supply a force of high-quality employees to the labor market.

Numerous international and Vietnamese researchers and journalists have highlighted that most of university graduates were better at theory than practice, and most of vocational learners learned knowledge and skills that were out of date and inappropriate with industrial requirements (Trinh, 2003; Huynh, 2016; Trines, 2017; Vo, 2019a; London, 2011; Ngoc Quang, 2016)

## **1.2. Vietnam's VET development and the shortage of skilled labor**

### **1.2.1. Vietnam's VET development**

In a nutshell, Vietnam's VET system is governed by two agencies: the Ministry of Education and Training (MoET) and the Ministry of Labor, Invalids and Social Affairs (MoLISA). The department of MoLISA in charge of vocational training is the Directorate of VET (DVET).

According to the 2006 Law of Vocational Training, VET supplier facilities have three groups: vocational colleges, vocational secondary schools, and vocational training centers. The major difference between VET institutions belonging to the MoET and to the DVET is their curricula framework. Approximately two-thirds of curricula of MoET institutions comprise theory, and one-third is practical training, whereas in the DVET institutions, these numbers are in reverse. Although their curricula follow the MoET or DVET, VET institutions can be owned and funded by other state and local authorities, public enterprises, mass organizations, trade unions, and private owners.

The network of Vietnamese VET institutes has expanded, and in principle, aligned with economic sectors, regions, and localities. According to a report by the MoLISA, until

the end of 2018, there were 1,948 vocational institutes nationwide, of which: 397, 519, and 1,032 were colleges, secondary schools, and vocational training centers, respectively (Hai Nguyen, 2019). These institutions oversee training at three levels: vocational elementary, vocational secondary, and vocational college. The vocational colleges can deliver training at the three levels mentioned previously, whereas vocational secondary schools can deliver two levels of training (secondary level and elementary levels), and vocational training centers are only allowed to provide an elementary level of vocational training.

After numerous renovations, from 2006 to now, the Vietnamese government has considered VET as one of the top targets in training and supplying skilled workers and developing a more globalized industrial economy. Therefore, the VET system of Vietnam has changed markedly from time to time. The DVET and vocational institutions across the country have conducted numerous advanced innovations and reforms related to training programs, job orientation, and student enrollment, which the researcher will discuss in the later parts of this thesis. The adoption of the German Dual VET model has been one of most significant efforts by Vietnam's VET in developing training systems and upgrading workers' skills. In particular, the sector of industrial manufacturing in Vietnam has been growing stronger. This reform has brought up many challenges regarding the lack of technical skills for Vietnam's VET (TVET News, 2017).

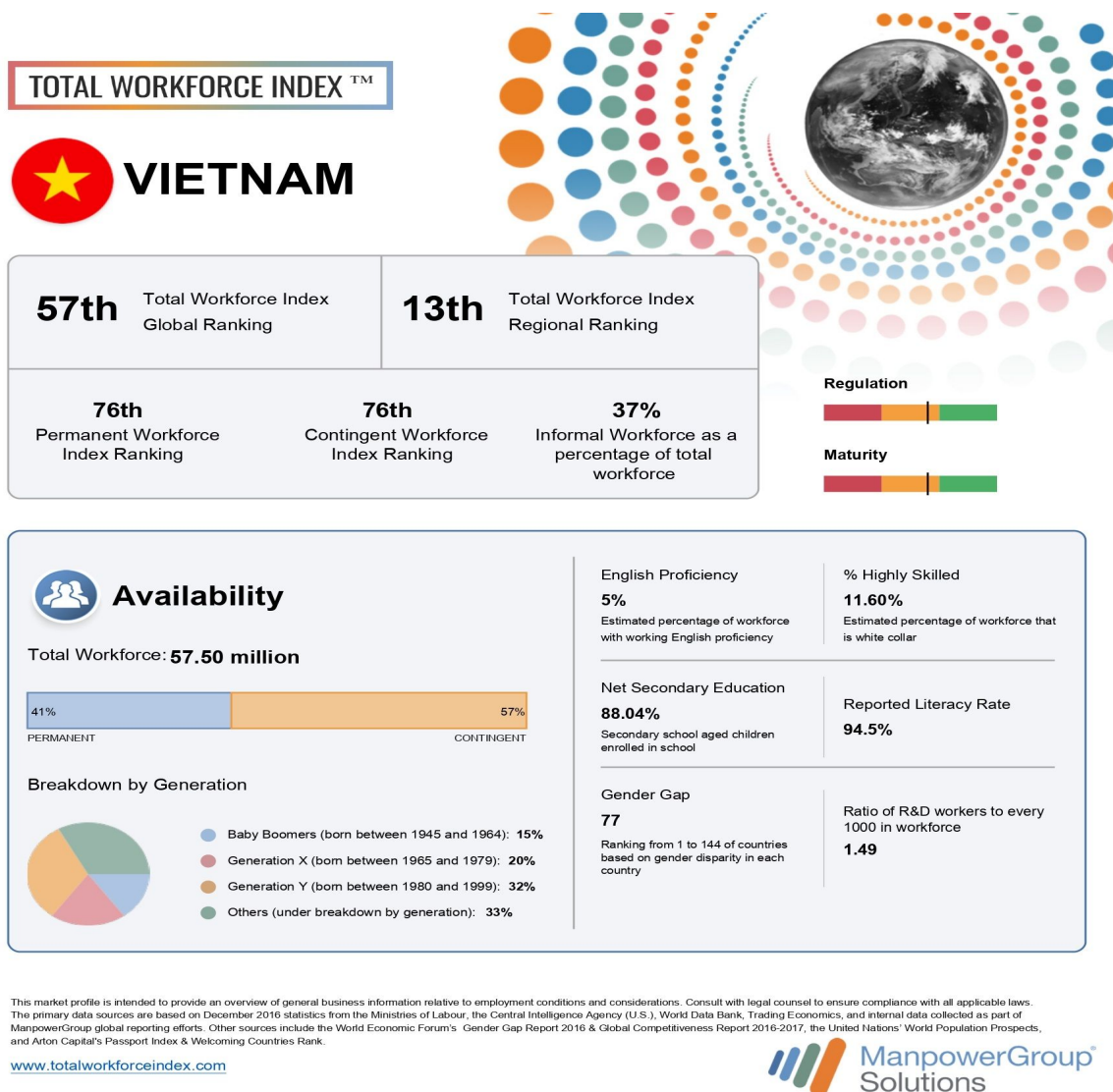
### **1.2.2. The shortage of skilled labor**

According to a report by the Vietnamese Ministry of Planning and Investment, in 2018, compared with other Asian countries, Vietnam's labor productivity was low. In 2018, calculating in accordance with Purchasing Power Parity, Vietnam's labor productivity

reached US\$11,142, only 7.3%, 19%, 44.8%, and 55.9% that of Singapore, Thailand, Indonesia, and the Philippines, respectively (VNS, 2019). The General Statistics Office said that Vietnam's labor productivity was only 1/18<sup>th</sup> of that of Singapore, 1/16<sup>th</sup> of that of Malaysia, and 1/3 of that of Thailand and China in 2018. Vietnam's labor productivity was lower than Cambodia's in the manufacturing, construction and transportation-storage-communications sectors (Dat, 2018). The country's productivity ranked the second lowest among the countries reviewed, and was only higher than Cambodia in terms of agriculture, electricity-water-gas, and wholesale-retail-repair sectors.

Figure 1.2 shows that in the 2019 Total Workforce Index, which is an assessment tool of relative ease of sourcing, hiring and retaining workforce skills in world labor market, Vietnam ranked 57<sup>th</sup> out of 76 countries and territories globally and 13<sup>th</sup> in the Asia-Pacific region in terms of sourcing candidates, hiring and retaining skilled labor (Nguyen, 2019). Vietnamese workers earned an average monthly income of \$242 in 2019, whereas the average monthly income in the Asia-Pacific region was \$1,801. In terms of skills, the percentage of highly skilled workers in Vietnam in 2019 accounted for 11.6% of the country's total workforce of 57.5 million. Skilled workers are workers having special skills, knowledge, and abilities in their work. In Vietnam, a skilled worker is considered to have attended a vocational college, technical school, or university related to industrial engineering.





**Figure 1.2.2: Vietnam’s ranking regarding skilled labor**  
(Source: Nguyen, 2019)

According to the 2020 Global Talent Competitiveness Index, which assesses countries potential to attract, develop, and retain talent, Vietnam ranks 96<sup>th</sup> out of 132 countries; in terms of vocational and technical skills, the country stands at 117<sup>th</sup> place (VNS, 2020). Most foreign direct investment (FDI) enterprises were attracted to Vietnam because of the large amount of good and low-wage production-line workers. Although Vietnam's labor productivity has improved significantly in the past decade, it is still lower than that of

other Asian countries. If Vietnam does not promote the comprehensive reform of labor skills, the FDI assemblers may move to other countries when the wages increase in Vietnam, and the ranking position may be further than 96<sup>th</sup>. The 2017 Provincial Competitiveness Index report by the Vietnam Chamber of Commerce and Industry showed that 69% of FDI firms in Vietnam are facing difficulties in recruiting skilled technicians and workers (Nhan, 2018). The report also determined that the quality of Vietnam's human resources has not made substantial progress. In fact, training costs for new workers in FDI businesses have increased over the years from 3.6% in 2013 to 5.9% in 2014, and in 2017, it reached 5.7% of general business cost. Therefore, measures to reduce new training costs but increase labor quality are really essential. Moreover, numerous Vietnamese workers have been less appreciated than those from Malaysia, Thailand, and Singapore because of their lack of required skills, such as language, technical, and hands-on skills (Shira et.al., 2015).

### **1.3. Dual VET system of Vietnam in recent years**

New graduates from universities and vocational colleges have been considered the skilled force of workers in Vietnam. After the Doi Moi policies and other educational reforms, many Vietnamese vocational colleges have made positive changes, particularly with the adoption of the German Dual VET system, which has been considered crucial to the success of the country's economy, as mentioned previously. Dual VET was established by the German Education system which combines two types of learning as school-based and in-company into one course. After being adopted in 2013, the Vietnamese Dual VET system has achieved some specific results so far in terms of the quality of graduates and the cooperation between vocational institutes and enterprises. According to Vietnam AHK (n.d.),

2013 was the first year seeing the partnership between Bosch Vietnam Company Limited and Lilama2 Technical and Technology College in Dong Nai province in the mechanic industry. Following the footsteps of Lilama2 College, some of top vocational colleges in Vietnam have become active in finding and establishing relationships with the enterprises by setting up combined training courses. However, on the one hand, the vocational institutes have been experiencing difficulty in finding out suitable affiliate enterprises, and on the other hand, many enterprises have not been interested in cooperating with any vocational institutes in training skills.

In the German Dual VET system, on-the-job training (OJT) is one of two types of training combined into one course. BIBB (n.d.) defines OJT as a practical approach to acquiring new competencies and skills needed for a job in a real, or close to real, working environment. OJT is the most important element in a VET system because it can significantly improve the quality of the VET learners as well as increase the productivity and efficiency of the industries. In the spirit of adopting the German Dual model, in Vietnamese VET system, OJT has been getting more and more attention in nationwide vocational institutions by sending out students to the live-work settings to be trained in hands-on skills through particular working tools (Vietnam TVET News, 2017). Rather than showing the trainees the presentations or worksheets, the trainees learn about the job by doing it under the guidance and supervision of the trainers who are company's managers or college's instructors. That is what OJT is about, as can be seen through the articles and reports.

To ensure demand-driven VET programs, the government of Vietnam has acknowledged that occupational standards, jointly developed and in cooperation with the business sector, need to serve as the basis for developing the training programs in coming times (ADB, 2020). Besides complementing for the Vietnam VET Report in 2014, the ADB

continues to emphasize the importance of stimulating greater enterprise-based training as one of top recommendations for Vietnam's VET and skill development.

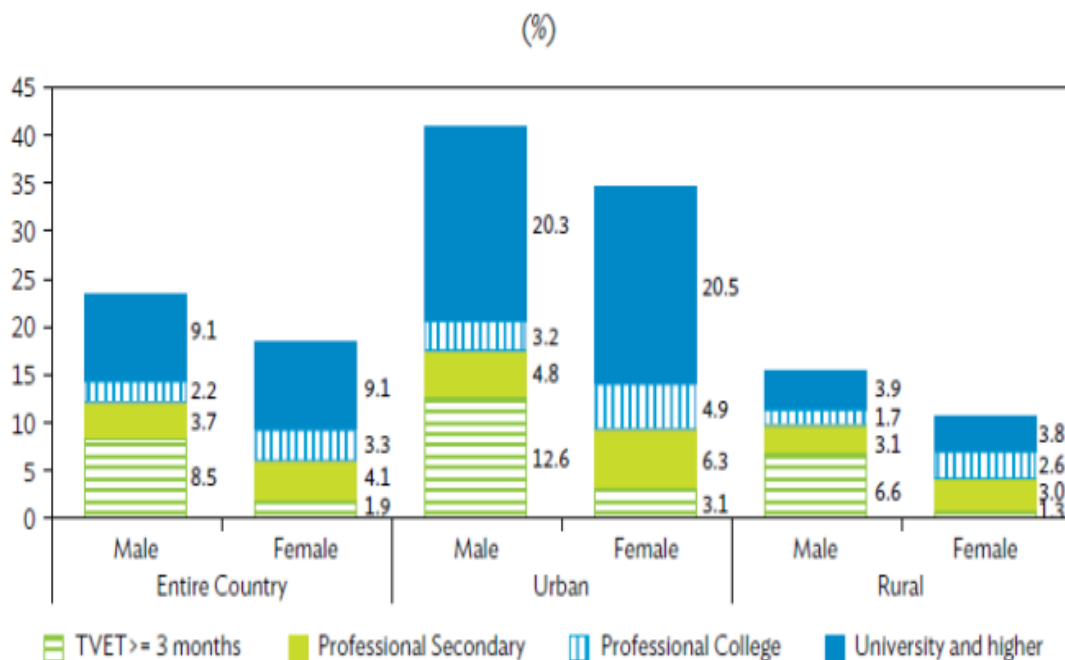
#### **1.4. Rationale of the study**

##### **1.4.1. Disparities in the distribution of qualification types and levels**

According to Report on Labor Force Survey (2016) conducted by the General Statistic Office of Vietnam, people with university degrees account for a large share of Vietnam's workforce. As shown in Figure 1.4.1, countrywide qualifications subsumed under the "professional college" cover only 5.5% versus 18.2% under university for both of males and females. Regarding to this problem, discussing on the mismatch between education qualifications, Le and Tran (2019) argue that the largest proportion of high-quality labor in the Vietnamese labor market has come from university graduates, but most of them learned mainly theory rather than hands-on skills, while a small proportion of labor market who graduated from vocational institutes learned more practical skills. The wage rates also have significant differences between these labor types.

Vo (2019) discusses about the status of "exceeding in teachers, lacking of workers", which Vietnam will have to face in coming decades. Due to the trend of preferring to attend in universities rather than vocational institutes, at all levels of education, Vietnam now has too many people educated to become teachers or managers instead of workers. For a developing country, it is better if there is a large quantity of laborers with practical knowledge. One reason for this situation is the development of the labor structure according to qualifications rather than hands-on skills. In 2017, the unemployment rate of workers with a

university or higher degree was 0.51% of the total workforce, six times higher than the unemployment rate at the vocational college level (Vietnam TVET News, 2017). Hence, it is apparent that vocational training has become one of the leading goals of labor quality improvement in Vietnam.



**Figure 1.4.1:** Report on Labor Force Survey 2016  
 (Source: General Statistics Office of Vietnam, Hanoi, August 2017)

### 1.4.2. Skills lacking in Vietnamese workers

Skilled labor is a determining factor for the sustainable growth of a country. In the process of industrialization, modernization, and internationalization, the size of skilled-labor must enlarge respectively. There have been many reports and journal articles discussing on the current shortage of skilled-labor in Vietnam today (for example, Mori, 2009; Bodewig, 2013; Shira et.al., 2015; Hoa, 2018; Das, 2018).

Shira et. al. (2015) state that many Vietnamese workers lacking essential skills related to jobs, such as language and cognitive, technical, and practical skills so many foreign companies in Vietnam have found it difficult to recruit mid-level and senior staff, especially in the fields of electrical, electronic engineering, and automobiles (Shira et. al., 2015). Shira also determined one reason for Vietnam's skilled-labor shortage, which is because the national education system has focused more on theory than on practical skills. In the research on partnerships between Vietnam's VET and FDI companies, Mori et. al. (2009) state that although FDI has been increasingly investing in Vietnam in recent years, there is no guarantee this trend will continue in the coming years (Mori et. al., 2009). In their study, Mori et. al. (2009) point out the specific levels of workers and kinds of skills in lack, and suggest the solution as promoting the partnerships between Vietnam's VET and FDI enterprises. Bodewig (2015) reported that Vietnam has had a rapid transformation from an agricultural to an industrial economy since the 1990s and has become increasingly industrialized and modernized (Bodewig, 2015). Therefore, education plays an enabling role. However, the creation of new jobs also requires new skills. The report identifies the skills in demand, including cognitive, behavioral, and technical skills.

#### **1.4.3. Recommended suggestions on VET optimization and justification of the study**

For the current alarming skilled-labor shortage situation, most of the reports and articles provide overall scenarios of Vietnam's VET in terms of statistics, forms, and locations. Vietnamese VET has developed and made remarkable changes with the adoption of the German Dual training model since 2015, especially in 2017 and 2018, but is still ranked 96<sup>th</sup> out of 132 countries worth investing in the world (VNS, 2020). Upon close correlation

between skilled workers and the Dual VET model, so far, there has been no thorough study conducted to investigate the implementation of Dual VET at vocational colleges and what factors affect the effectiveness of Dual VET system. The reasons why Dual VET and Vietnam's industry context were chosen as research subjects are because Dual VET is one of the advanced reform methods that the Vietnamese government and vocational institutions have adopted from Germany to improve the old VET system, and Vietnam's industry is one of the determining factors for the country's sustainable development. There have been many foreign researchers who have conducted studies on the Dual VET model in Vietnam; however, the number of Vietnamese researchers studying this is low. In consideration of the reliability of a research project regarding the issues of Vietnam, a Vietnamese researcher will have more potential to deploy in-depth points of view from all research participants, especially those who cannot understand and speak foreign languages. Furthermore, this study focuses on deploying in depth the viewpoints of the author's experience with Dual VET toward its implementation in the vocational institutions.

With experience of working at a provincial vocational college for more than 7 years (Vietnam – Korea Vocational College of Technology in Bac Giang province), the researcher has observed many OJT courses held in cooperation between vocational colleges and enterprises. In fact, the companies came to the colleges and asked students to participate in their work in factories. Students often spent 2 - 3 months with companies doing very simple tasks or segments of jobs that have no specific names. They have not had any chance to experience any practical skills training, even though pre-training courses, during their OJT time. During that period, students could receive relatively low wages corresponding to the simple works they do daily. Sometimes, students worked overtime as requested by their manager. In general, this situation could be called as “cheap worker hiring”, rather than

practical training in the company. Meanwhile, according to the German Office for International Co-operation in Vocational Education and Training (GOVET), the standards of a Dual VET model should be “Dual” in the sense that there is for each occupation, on the one hand, a standard for the provision of in-company VET defined in so-called “training regulations”, and a standard for school-based VET defined in the so-called “framework curriculum” (BIBB, n.d.). Training regulations are a combination of occupational profiles, training standards, and examination standards. Framework curricula are the basis for vocational education at VET schools and are closely coordinated with training regulations. Learning from these standards and applying them for the real context of Vietnam, many vocational institutions have been in association with enterprises in developing training programs in both institutions and companies. One of the top targets upon adopting the German VET model is distributing 30% for in-school learning and 70% for in-company training in the framework curriculum of vocational institutes (VCTH, n.d.). Germany has strong economic growth and different governmental policies from Vietnam and other developing countries, however, Vietnam has increasingly attracted many FDI companies to invest in. Many enterprises are now in contract with vocational institutions in providing students with training program in their factories.

Dual VET is not a new or attractive theme for the researchers. However, it is necessary to explore, especially for the individuals and organizations relevant to occupational learning and training. In the current context of globalization and industrialization, Vietnam and other Global South countries need a high-quality human resources more than ever. Being considered as a bridge that trains and supplies workers to the labor market, VET has been of great potential in the field of research. A Dual VET system is a combination of school-based learning and in-company training, in which in-company training or on-the-job training (OJT)



plays a key role because it is the stage to help equip learners with practical skills at actual production sites. Not offering general policy solutions, as previous studies have done, this thesis focuses directly on OJT by investigating in depth the individuals related to VET in Vietnam to measure its effectiveness.

### **1.5. Significance of the study**

Obviously, through the statistical reports, the Vietnamese Dual VET system has not really succeeded in providing the Vietnamese labor market with a high-quality workforce that meets the requirements of FDI companies. In other words, there are very few graduates from the Dual VET system who have been recognized as skilled workers. To understand the real implementation of Dual VET in national vocational colleges and the role of business cooperation and OJT in the Dual VET system, this study aims to answer the following two questions:

(1) To what extent does the number of affiliate enterprises affect the effectiveness of Dual VET in Vietnamese vocational colleges?

(2) How effective is on-the-job training (OJT) of the Dual VET system toward enhancing the qualification of Vietnamese workers?

The findings of this study can provide more data and arguments in the fields of skilled-labor and Dual training research in Vietnam and can be beneficial for authorities and stakeholders (relevant ministries, the DVET, nationwide vocational schools and colleges) to review and evaluate Vietnam's VET system and then upgrade the technical and hands-on skills of the labor force.

## CHAPTER II. LITERATURE REVIEW

### 2.1. German Dual VET and its roles in labor quality

VET is the direct key to enhancing the labor-skill development, especially in the machinery industry. According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO) (GC, 2015), VET is defined as all educational and training activities at vocational institutions to equip learners with the practical skills, knowledge, and attitudes required in the world of work. VET's feature is focusing on specific occupations, so it has allowed individuals to develop relevant skills. Thus, it can be said that VET is the pedal to boost up high-skilled workforce development. Based on the Assessment of the ADB on Vietnam's VET (2014), the VET system of Vietnam has achieved many significant reforms or renovations for this decade, including increases in the number of vocational training centers, vocational secondary schools and vocational colleges, increases in student enrollment, and upgrading of teacher and management levels. According to the Vietnam VET Report (2017), Vietnam has adopted the German Dual training model since 2015, which has successfully been implemented in Germany and many other countries such as Austria, Switzerland, Denmark, and parts of the Netherlands with positive results for VET (Nguyen, 2017). The Germany's Dual vocational training program, which is known as VET, is a mode comprised of two educational components including classroom study at vocational schools and on-the-job work training and supervision as well (Hockenos, 2018). According to Hockenos (2018), most of Germany's high-skilled workers have gone through the Dual system of VET. Participating in this model, students learn theoretical knowledge of their

occupation of choice in several days a week or even several weeks at a time, and at the same time they are hosted by a company to gain practical skills and hands-on experience.

In the German system, a novice should spend 60% of their time in a workplace under the supervision of a certified trainer, and just 40% in the classroom. The Vocational Training Act of 1969, which was amended in 2005, introduced a solid relationship between the government and companies with the purpose of providing young people with training for nationally recognized occupations by means of certificates or training courses (BMBF, n.d.). In this spirit, businesses that take part in the Dual training scheme should consider the vocational training as the best way to recruit personnel. These companies not only save on recruitment costs but also avoid the risk of hiring the wrong employee for the job. Investment in training is a key factor for success in an increasingly competitive world. Barbel et. al. (2014) argue that the German Dual training system aims to support a successful transition of young people from school to work and to guarantee a skilled workforce as a prerequisite for a successful economy. This means that Dual training is “learning by doing”, and VET contributes to helping students attain and develop competence in action so that they can meet current and future professional challenges and participate in vocational lives. In this original model, students can enter the Dual system after finishing 10 years of secondary I level at a secondary general school or intermediate school, and entering the Dual system means entering the secondary II level. Apprenticeships in the Dual system are only possible for state-recognized training occupations (Barbel et. al., 2014). Training places that are offered by companies in the private sector (industry, craft, and agriculture), institutions of the public sector, play a crucial role in organization, administration, and examination of vocational training through basic courses on pedagogical eligibility. Meanwhile, vocational schools

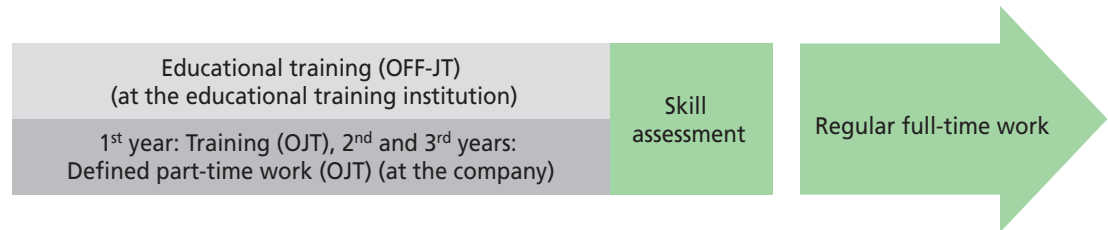
have the task of complementing in-company training by imparting both general knowledge and job-specific knowledge to the students.

## **2.2. Japanese Dual system**

Another example is Japanese-version Dual system, also based on the German system, in which young people study at vocational schools while training as apprentices in firms (MoHLW, 2016). The basic working method is “learning while working”; however, a different point from the German system is that this system includes not only non-working high school graduates but also unemployed people and part-time workers. This system was planned so that a person undertakes in-company training 3 days a week, while undergoing educational training in a lecture environment at a school 2 days a week. The Japanese Dual system involves two pillars: an “educational training-type” mechanism, by which the educational institution locates a firm that will accept a young participant and entrusts that firm to implement OJT, and a “company employment-type” mechanism, which implements off-site job training (OFF-JT) through a part-time employment contract entered into and signed by the young person and the accepting firm. One of the keys to the success of the Japanese Dual system depends on the extent industries can be enticed to contribute. However, at this time this Japanese-version Dual System has not gained the understanding of would-be receiving enterprises because it needs time and essential resources to ensure that the occupational training will not become the odd jobs and to what extent coordination of educational training can be undertaken. Therefore, the Japanese Dual system may offer a new challenge to Japanese society that has not provided enough social support to young people up until now.

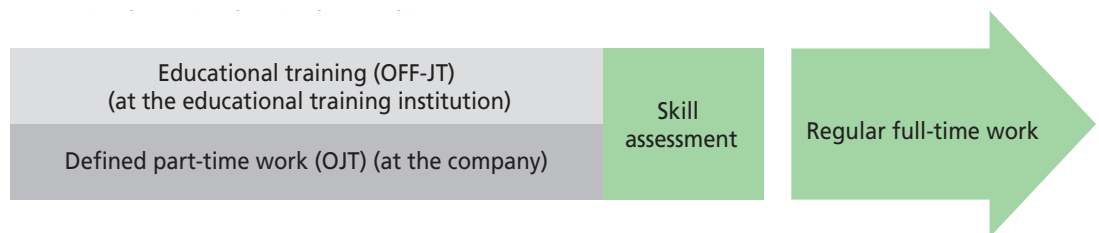
Here are the two basic working methods of the Japanese Dual system:

(1) The learner will jointly study at the educational institution and participate in OJT at the firm. Most of the time during the 3-year program will be spent doing OJT or part-time jobs at firms (Figure 2.2a).



**Figure 2.2a:** First basic working method of Japanese Dual system  
(Source: MOHLW, 2016)

(2) The young person signs a part-time employment contract with a firm and then chooses and undertakes an educational training program (OFF-JT) at an institution simultaneously with the OJT at the company (Figure 2.2b).



**Figure 2.2b:** Second basic working method of Japanese Dual system  
(Source: MOHLW, 2016)

### 2.3. Examples of Dual VET models in Vietnam

So far, under the partnership between the Vietnamese and German governments in terms of VET development, there have been some typical Dual VET models implemented in some vocational colleges (TVET Vietnam News, 2017). Two of them were executed several

years ago and were reported with some achievements in terms of the quality of training content, time distribution for theory and practice, and the knowledge and skills of new graduates based on the German-standardized examinations. However, the significant number of vocational institutes nationally, the number of pilot models has been small, and the quantity of students enrolled in these models has been still low, with around 20-30 students per each case. This will not help solve the problem of increasing labor productivity in Vietnam during this period.

In November 2018, the first 3-year cooperative pilot training program of Sewage Engineering Technicians was successfully completed with graduates trained and qualified according to the German standard at the Ho Chi Minh Vocational College of Technology (HVCT) (iMOVE, 2019). Oriented toward German occupational standards and tailored to fit local conditions, this was the first cooperative training program in Vietnam, in which all relevant stakeholders, including the MoLISA/DVET, the Ministry of Construction, HVCT, and wastewater companies, made joint decisions in the development, implementation, and assessment of the program. One of the most important factors contributing to the program's effectiveness was the quality of VET personnel because all the college teachers, in-company trainers, and examiners were trained and examined in accordance with German standards. From this program, 21 graduates were qualified as sewage engineering technicians according to German standards.

The second pilot model was conducted at Lilama 2 College in Dong Nai Province. Lilama 2 was chosen by the Vietnamese and German governments to be a Centre of Excellence to supply high-quality workers for the labor market of Vietnam (Lilama2, 2018). After this, Lilama 2 was selected by Bosch Rexroth Corporation, GIZ, and the DVET to construct the pilot Dual training model. This program provided a 3-year training program for

students of mechanical engineering and mechatronics. In this model, students got an allowance from Bosch of 2.7 million VND per month for the first 2 years and 3.7 million VND monthly for the third year. Students practiced at the factories 3 weeks each month, and the remaining week was for in-school study. Periodic examinations were implemented under control of both of Lilama2's teachers and in-company trainers. After graduation, students were employed directly by Bosch and other its partner companies.

The third is the partnership between BBraun and Messer Company and Hung Yen University of Technology and Education (HYUTE) (DVET, 2018). This is a part of an overall collaboration between Germany and Vietnam to bring breakthroughs to Vietnam's VET system. Based on the Dual VET, mechatronics students at HYUTE will be trained for 3 years in a structured and systematic apprenticeship program which is constructed by both parties. They will practice at factories starting from the second year to learn about the industry functions and thus to prepare for their future jobs. In this program, BBraun and Messer will provide students with practical knowledge, such as standards of technical drawing, manufacturing, assembly, testing of components of mechatronics systems, microcontrollers, pneumatic, and hydraulic systems. From the second year, students will receive allowance of 2.5 million VND per month. After graduation, students will receive a college diploma and certificate from the company. Then, they will have the opportunity to be employed by German companies located inside or outside of Vietnam.

The fourth is the association between Holcim Company and the Technical and Economic College of Kien Giang province (TEC) (Holcim, 2019). This is a practical 3-year or 9-semester training program in cement manufacturing. Graduates will get a college degree issued by the MoET. In the first semester, students will study at TEC, while the rest of their time will be spent at Holcim's plant in Kien Giang province. Students will receive allowance

during the training. This pilot model is part of an overall strategy of Holcim to advance its human resources, including engineers, technicians and managers.

#### **2.4. OJT and its roles in the Dual VET system**

The close cohesion between vocational colleges and enterprises under the win-win situation is one of the success factors of Dual VET in Germany, Japan, Australia and other developed countries (Bliem et. al., 2014). In detail, the employee management agencies, which are local management units of labor in Vietnam such as the MoLISA and the Provincial Department of Labor, Invalids and Social Affairs, will be in charge of bringing enterprises closer to the vocational institutions and supporting institutions in contracting with appropriate enterprises. Many foreign and local researchers define the importance of OJT in this Dual VET system (Mori et.al., 2009; Vo, 2019; Pham et. al., 2017; Vu, 2017; Vu, 2018; Cao, 2011). For employees, OJT is beneficial because it allows them to learn a new skill or qualification within their field of work in a timely matter. During OJT, they are engaged in the real production process instead of a simulated learning process (John et. al., 1997). For the employers, OJT is beneficial because it narrows down and prepares the skilled employees who are right for the company. It is also cost-effective because after OJT, people can cover more tasks rather than those specified in their job description. When being trained in job areas during OJT, the employees can have more of a chance to ask about and understand job-related things in terms of the company's regulations, work safety rules, the machine operation manual, advanced skills, and more, rather than just doing tasks.



## **2.5. Debates on Dual VET and OJT**

The Dual VET system has originated in Germany with many successful insights to be learned by other Global North countries including Austria and Switzerland. Many developed countries have begun to show great interest in adopting Dual apprenticeships in their own national contexts with the aim of improving the employability of young adults and smoothening the school-to-work transitions. Relevant to challenges to the implementation of Dual apprenticeships in Organisation for Economic Co-operation and Development (OECD) countries, Oscar (2017) systematized the evidence on some of the challenges and dilemmas that governments in OECD countries face when they want to implement large-scale Dual apprenticeship programs. This literature review also gives the conclusion that making Dual VET attractive to both of employers and vocational institutions is the main challenge. When deciding to guide vocational systems toward a dual model, each country must understand how different designs of Dual apprenticeship programs interact with the socioeconomic contexts in which they are implemented. For instance, the developing countries like Vietnam, with different social and cultural embeddedness and different institutional arrangements, may not directly transfer the German Dual system for its effective implementation. Another example in accordance with Robert (2014) shows that Spain and many other developed countries from Southern Europe started the adoption of the German Dual model and faced many challenges in its implementation. In the Dual VET systems, there is a strong component of school-based education and well-organized employer associations that are involved in the assurance of quality of the OJT programs. This differs greatly from areas like the UK, where the training standards for apprenticeships vary largely by occupation and sector and quite

often require little off-the-job training in the formal vocational education system (Wolter & Ryan, 2011).

Around the debates regarding the transfer of the Dual VET from Germany to other countries, Matthias et. al. (2020) state that among the very few number of studies on dual transfer, in some countries such as China, India, and Mexico, the local training practices play a dominant role in the vocational training systems. This means that in these three countries, the VET system is still school-based, with very little or no job-oriented program in the training curricula.

Back to the context of Vietnam, Vo (2019) discusses how Vietnamese vocational institutions have difficulty accessing the needs of industries and consequently, many Vietnamese enterprises struggle to re-train their newcomers after recruitment. This is the reason in-house training or Dual apprenticeship programs have been implemented in many vocational institutions and most of companies in Vietnam. However, the companies have difficulty in defining the skills and knowledge that could be used as a reference for developing a roadmap of training and controlling the quality of the combined courses. In his study, Vo (2019) suggests that both of Vietnamese vocational institutions and enterprises should be involved in designing and conducting the Dual training curriculum. However, by far the development of training curricula has been entirely conducted and controlled by the MoLISA/DVET. A curriculum framework with a uniform examination method has been given to nationwide vocational institutes for application in teaching and training. Therefore, revising these fixed curricula will require much time and power to get approved by the government and agencies in charge.

Tran (2006), Nguyen (2009), and Nguyen (2013) discuss and suggest the solutions of managing the training liaison between vocational institutions and enterprises in Vietnam by

(i) raising the perception of the community on the importance of job-oriented training; (ii) upgrading targets and program content of the training cooperation; (iii) managing man-talent-physical resources in which man-talent resources refer to the labor force in general and the strategic employees who are intended to improve business value, in particular, and physical resources that include raw materials, building facilities, machinery, energy, and supplies; and (iv) managing the in-school and in-company training. Phan (2017) focuses on the management of joint vocational training activities between vocational institutions and enterprises in order to meet with worker demand for the firms. However, none of these studies discuss about whether the in-company training programs under the Dual VET system in Vietnam have been effective or not.

A volume of studies and journal articles discuss about the importance of OJT in the Dual VET system (UKEssays, 2018; Duong, 2019; Bui, 2015; Nguyen, 2015; Vo, 2019b; Tibken, 2015). Notwithstanding the determination of OJT in the Dual VET system, the content and outcomes of an OJT are equally important though.

There have been also many studies about the Vietnamese skilled-labor shortage and the adoption of the German Dual vocational training model into the VET system. Most discuss the renovation of state management and the standardization of vocational education according to integration requirements and recommendations regarding partnerships between vocational institutes and enterprises from general perspectives. None provide investigations at any vocational institutions in terms of Dual VET application. From the perspective of the Vietnamese Dual VET, this study will focus on Dual VET implementation at Vietnamese vocational colleges to determine the importance of the quantity of companies in association with vocational colleges and to learn about the in-company training content.

## **2.6. ADB's assessments of current Dual VET development in Vietnam**

According to the assessment of the ADB (2020), although there are a number of promising exceptions, still, most of the VET institutions in Vietnam do not provide graduates with sufficiently appropriate skills required to increase the productivity and competitiveness of companies and, hence, boost the country's economy through higher labor productivity and value production. In this section, the latest assessment by the ADB was used to determine the pros and cons of the Dual VET system that Vietnam has been faced. The ADB is an alliance of states of many countries from almost all regions worldwide, and it is committed to promoting social and economic development for a sustainable Asia and the Pacific by assisting its members with loans, technical assistance, grants, and equity investment provisions. For this study, Dual VET implementation in Vietnam was considered in both its strengths and shortcomings. The ADB's reviews provide more robust and multidimensional study than the internal ones completed by vocational institutions and relevant agencies.

To critically reveal the limitations and weaknesses of the VET reform initiatives in Vietnam, the ADB analyzed the reports written by the MoLISA and the National Institute of Vocational Training. The limitations pointed out by the ADB include the continuing mismatch between supply and demand along with limited attractiveness, training quality, and VET program relevance. Additionally, the ADB determined the main causes for missing VET reform strategic targets in Vietnam, which were as follows:

- (i) All stakeholders including students and parents, employers, and public authorities, still underestimate the role and importance of VET compared with other subsectors providing general and higher education qualifications.
- (ii) VET is not sufficiently linked to the demand of the labor market.

- (iii) Operational mechanisms of VET reform are lack effectiveness in terms of student recruitment, organizational constraints, financing schemes, etc.
- (iv) Quality assurance conditions at VET institutions are weak (training programs do not match practical conditions of production, teachers are lack of professional skills, facilities are outdated, etc.).
- (v) The call for VET investments has not met the development requirements.

Same as the rationale of this study, the ADB assessment revealed the mismatch between supply and demand or, in other words, between human resource supply and business requirements. In the VET sector, this mismatch means the quality and skills of the graduates do not match the practical demands of enterprises. Nevertheless, the assessment does not go into depth to determine the causes of this mismatch. Having the role of a Vietnamese researcher, this study explores this.

## **2.7. Typical methods of learning evaluation**

To achieve a successful learning or training journey, the right evaluation method is extremely important (Kaufman, 1994). Without proper evaluation, how would you know whether a course is having an important impact on the learners? VET generally, and Dual VET in particular, are quite long training processes. Looking through a variety of evaluation models, including Kirkpatrick's model, the Context–Input–Reaction–Outcome (CIRO) model, and the Philips Return of Investment (ROI) model (Deller, 2020), the researcher recommends Kaufman's Five Level Model of Learning Evaluation as the most appropriate method to evaluate the efficiency of Dual VET's performance in the current Vietnamese VET system. Kirkpatrick's model is the prerequisite version for the development of the Kaufman model

(Kirkpatrick, 1994). The Kirkpatrick model used to be the most widely-used and in-demand method for the assessment of training based on four levels: reaction (measuring how participants react to the training), learning (analyzing whether they truly understand the training by increasing knowledge, skills, or experience), behavior (looking at whether they are utilizing what they learned at work), and results (determining whether the material has had a positive impact on the organization). According to Hashit (2012), CIRO, the four levels of learning evaluation, is one of the lesser-known models to be used for evaluating the effectiveness of training courses. The main elements of CIRO include context (determining training needs and objectives by obtaining and using information related to the operational situation), input (selecting between alternative inputs of the training process by obtaining and using information about available training resources), reaction (obtaining and using information about the participant's reactions to improve the process), outcome (obtaining and using information about the outcomes or results of the training). Another type is the Philips ROI model, which was developed from Kirkpatrick model by adding Return of Investment (ROI) to allow an organization to compare between the outcomes and paid costs (Harshit, 2012). While Kaufman's model, which was developed from Kirkpatrick, includes five steps of evaluation, namely measuring the invested resources, assessing how well learning objectives are met, measuring practical impact, measuring potential benefits for institutions, and evaluating the effectiveness of the learning course in relation to society (Kaufman et. al., 1995). After comparing the characteristics of the models above, the researcher recommends the Kaufman model due to its tendency of practical application. It measures the attainment of a training target through the learner's rating. This is significantly important for evaluating the effectiveness of OJT as well as other vocational training activities. The Kaufman model was first dawn and discussed in various education-related

international studies, but none of them specifically regarded to VET (Kaufman & Keller, 1994; Kaufman, Keller, & Watskin, 1995; Downes, 2015; Bhatnagar, 2012; Kumar et. al., 2018). No Vietnamese researcher has thus far discussed about Kaufman's model in evaluating the quality of VET systems.

Torres (2005) determined the importance of evaluation in the training process that is to identify the strengths and weaknesses of the program, to compare the costs and benefits of the program, to determine whether the program has been successful or not, and to decide who should participate in future programs. To conduct the evaluation process, besides the abovementioned assessment models, the researchers and educators have often used some popular evaluation tools including questionnaires, surveys, tests, interviews, focus groups, observations, and performance records (PILAC, 2016). Among these evaluation tools, a pre/post-knowledge test is a common form of evaluating programs in terms of improving the knowledge of the participants. Identical tests may be used for pre- and post-tests to compare scores before and after the training (Jack & Patricia, 2012).

One of those mentioned above is the survey. Peter (2012) proposes the Student Outcomes Survey as a survey of VET students in terms of satisfaction toward different aspects of training under teaching, assessment, generic skills, and learning experiences. The surveys were often in the form of 5-level ascending Likert scales (strongly disagree to strongly agree).

## CHAPTER III. METHODOLOGY

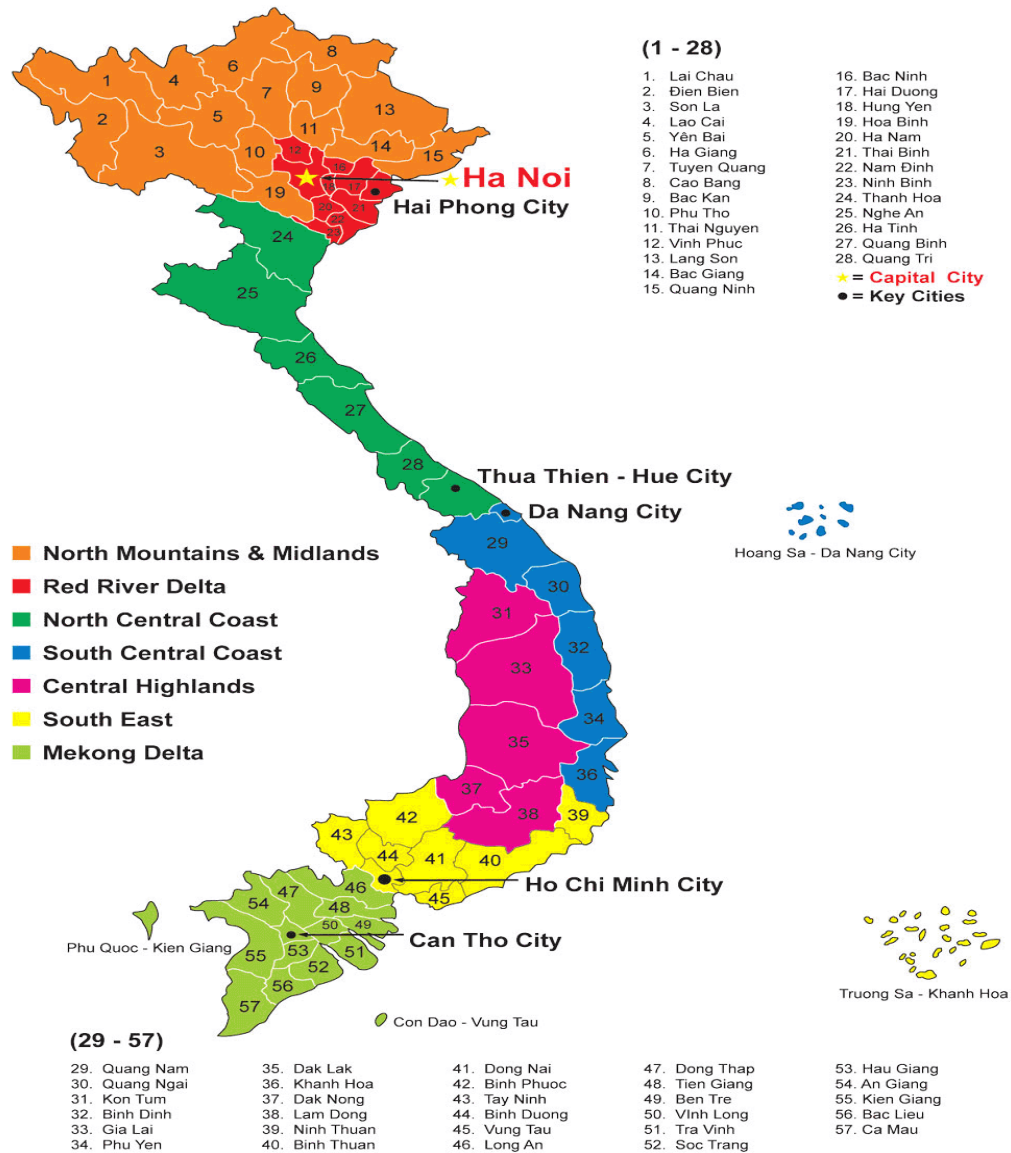
This chapter justifies how the researcher has conducted the data collection instruments to answer the research questions outlined in the previous chapter.

### 3.1. Research sites

To ensure the possibility of the target areas and for the sake of the rationale and significance of this research, the geographic location should be areas in Vietnam where vocational institutions are associated with enterprises in training students. From the official reports on Vietnam's VET, the researcher selected certain key industrial areas of Vietnam, including Hanoi City, Vinh Phuc province, Bac Giang province, Thanh Hoa province, and Can Tho City as target areas for this study (Hanoi and Can Tho City are indicated by arrows, and Vinh Phuc and Thanh Hoa provinces are marked with numbers 11 and 24, respectively, in the Figure 3.1 below). Among the research sites, Hanoi City, Bac Giang province, and Vinh Phuc province which located in the north of Vietnam have been gathering many key industries (mechanical engineering, electronics) and vocational colleges in progress of executing Dual training and OJT programs. Thanh Hoa, which is a province in central Vietnam, has many large-scale constructional material factories and is highlighted with Thanh Hoa Vocational College, where it has been organizing more and more OJT programs for students every year. While the last, Can Tho City, which is in the south, was cited by local reports as having many difficulties developing the Dual system among its vocational institutes. One more reason for choosing these areas is because they have been focusing on developing advanced industrial manufacturing sectors, especially information technology,



electronics, mechanical engineering, automobile, and automotive technology, which are now spearhead training industries of the majority of nationwide vocational institutions.



**Figure 3.1.** Map of Vietnam (Source: quyhoachvietnam.com)

The research sites which were selected from the said areas are six vocational colleges where have been implementing the Dual VET, in which sites 1 and 2 are institutions with many successful achievement records, while the other sites were reported as having many difficulties and challenges in implementing Dual VET programs. Six research sites to be

investigated in this thesis include site 1 (Vietnam – Korea Vocational College of Technology in Bac Giang province), site 2 (Hanoi Vocational College of High Technology), site 3 (Vietnam – Korea Vocational College of Hanoi City), site 4 (Vinh Phuc Vocational College), site 5 (Thanh Hoa Vocational College of Industry), and site 6 (Can Tho Vocational College). This selection would be significant for comparing data for the study.

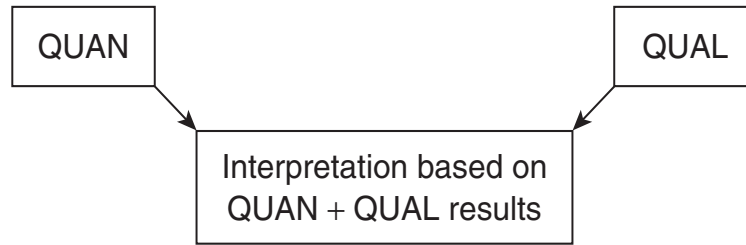
### **3.2. Methods: A mixed method approach**

According to Bryman (2006), using both of qualitative and quantitative methods will help correct for the inevitable biases which probably present in each method. With only one method, it is impossible to separate the bias of the method from the underlying quantity or quality that one is trying to measure, but with the use of several methods together, it can triangulate upon the underlying “truth”. The methodological triangulation with the use of methods and data sources would help examine the credibility and validity of the research findings. As both quantitative and qualitative methods are employed, this study consists of mixed method research. According to Bryman (2016), a convergent parallel design, one of the basic mixed methods designs, was constructed, in which both of quantitative and qualitative data were collected with equal priority at the same time and then were compared and/or merged to form integrated findings. To minimize bias when collecting the quantitative and qualitative data, the researcher used both of probability and non-probability sampling approaches. Non-probability sampling was carried out based on previous reports of vocational institutions and industrial FDI firms, which have recorded information about individuals participating in the VET systems. Meanwhile, randomly selecting each unit in the research population involves probability sampling by selecting vocational colleges based

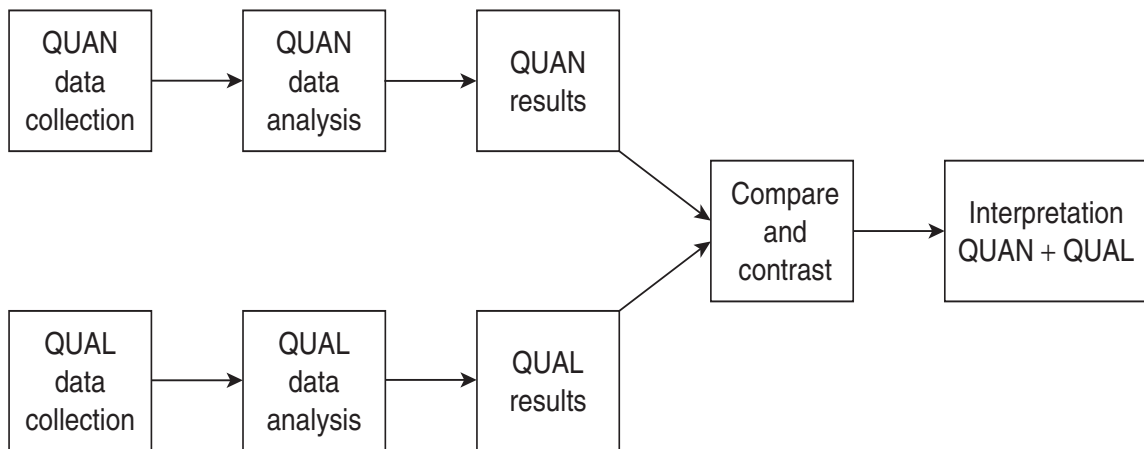
on the contact ability of the researcher. Probability allows the researcher to employ tests of statistical significance that permit inferences to be made about the sample from which the sample was selected (Bryman, 2016: 173-177).

### **3.3. Concurrent triangulation design**

Creswell and Plano (2006) argue that the most common and well-known to mixing method is the triangulation design. This design is used to obtain different but complementary data on the same topic to best understand the research problem. Being a mixed method one, this research combines both of quantitative and qualitative approaches to be employed. To attain the data size as estimated, the perspectives from both of service users (vocational learners) and service suppliers (vocational educators and firms' employers) were collected. This is the reason the researcher chose a concurrent triangulation design for this study for directly comparing the quantitative statistical results obtained from the learners with the qualitative findings obtained from the educators and employers. Within the scope of this study, based on two kinds of data samples, the research generally involved the concurrent but separate, collection and analysis of qualitative and quantitative data (Figure 3.4a). The two data sets were merged by bringing the separate results together in the interpretation for the best understanding of the research problem (Creswell & Plano, 2006). For this study, the researcher employed convergence model of triangulation design, which meant separately conducting the data collection and analysis of qualitative and quantitative data and then merging the two kinds of data sets into one overall interpretation by comparing and contrasting the different results and relating the quantitative results to the qualitative findings (Figure 3.4b).



**Figure 3.3a:** Concurrent triangulation design (Source: Creswell & Plano, 2006, p.63)



**Figure 3.3b:** Convergence model (Source: Creswell & Plano, 2006, p.63)

### 3.3.1. Reasons for choosing concurrent triangulation design

Firstly, with the large size of the research samples mentioned above, including hundreds of vocational students, vocational educators, and enterprises’ managers/employers, under this design, it would save time and cost for the data collection works because both types of data could be collected during one phase of the research at roughly the same time. While waiting for the questionnaire responses, the researcher also conducted the interviews.

Secondly, each type of data could be collected and analyzed in separate and independent ways using the techniques appropriate to each, so the researcher could freely

arrange methods of contacting to respondents and proceeding with the data collection prior to finalizing different results and findings based on the nature of each data type.

### **3.3.2. Challenges facing the researcher using concurrent triangulation design with convergence model**

First, although this design is the most popular for mixed methods research, it also presented some challenges for the researcher (Creswell & Plano, 2006). Although the concurrent design recommends the equal sizes of samples for each type of data, but for this study, the sample size of the quantitative data was much larger than that of the qualitative data, with 580 questionnaire respondents compared to only 17 interview participants, including 6 vocational educators and 11 enterprises' employers. To overcome this limitation, the researcher measured the weight of the samples rather than counting their size. Each educator can give bird's-eye views of his/her training program consisting of up to 100 learners. Furthermore, the amount of time for each in-depth interview was longer than that for each questionnaire completion. While quantitative data were collected from the questionnaires, the qualitative data were obtained from the interviews with vocational educators and enterprises' managers/employers.

Second, the researcher may face the question of what to do if the quantitative and qualitative results do not agree (Creswell & Plano, 2006). This research is not designed to test any kind of theory; hence, the researcher compared and contrasted the similarities and differences between the two data sets and then concluded on the findings in a very flexible way.

### **3.4. Data collection process**

#### **3.4.1. Questionnaires**

The first research instrument was questionnaires, which were completed in the period of October to December 2020 by 580 students in six vocational colleges in all three regions of Vietnam which have been implementing the Dual training model. As the significance of this study is toward Vietnam's VET development in general and OJT in particular, the samples for the questionnaires were determined in advance rather than using a random technique for the vocational students at the six vocational colleges nationwide that have been applying the Dual system in their training programs. For the best efficiency and reliability of the findings, only vocation-related individuals and institutes were investigated. Like other customer satisfaction surveys toward a product or service quality, this questionnaire was designed to measure the learners' response to and expectation of the quality of the Dual VET program to be experienced because the learners are the main users of VET, Dual VET, and OJT in particular. McColl-Kennedy and Schneider (2000) argue that one of the keys to long-term business success is customer satisfaction, which is an assessment of how well a company's products or services meet customer expectations. In this study, the researcher selected samples for conducting questionnaires as vocational students who have directly participated in a Dual training model or OJT program at vocational colleges nationwide. The evaluations of these respondents would be the most precise measurements of the quality of the Dual VET implementation currently in Vietnam. It is hereby considered in this research that the vocational learners' feedback or voices refer to as their thoughts, needs, feelings, expectations, and requirements toward the Dual training quality.

Due to the real difficulties of COVID-19, the survey conduction mode was shifted from being supervised to being online. A 26-question survey could be completed in around 10-15 minutes by a respondent with his/her own smartphone or personal computer through a Google document link supplied by the researcher. Right after the respondents submitted the answers to the questionnaire, the researcher immediately had their responses, as shown in the results section. Each survey was composed of various types of questions, including (i) Likert-scale questions to measure the learners' attitudes by measuring the extent to which they agreed or disagreed with a particular question or statement related to OJT; (ii) the multiple-choice questions for the purpose of expanding the range of respondents' choices; (iii) the open-ended questions so the respondents could freely express their thoughts and expectations; and (iv) dichotomous questions as well (see Appendix A). Before releasing the survey link to the respondents, the researcher obtained consent to do the research from the principals or educators in charge of Training and Students Affairs for each research site. Under such circumstances that the researcher can legally and easily gain access to the data archives, no consent is required (Bryman, 2016). In order to conduct this kind of research instrument, the researcher had some contacts through email and telephone with the principals and educators in charge of student and business cooperation affairs at the six vocational colleges to present the nature of the research and the purpose of surveying.

Quantitative and qualitative data were obtained from online questionnaires to conclude:

- (i) the percentage of students who have participated in OJT at the vocational colleges
- (ii) the number of students who feel satisfied with and benefitted from the OJT
- (iii) the number of students who do not have positive feedback toward the OJT

- (iv) other statistical data related to training curricula, OJT content, etc.
- (v) thoughts and expectations of the learners toward the Dual VET program

### **3.4.2. Semi-structured in-depth interviews**

Questionnaires and interviews are often used together in mixed method studies that investigate educational assessments (Brookhart & Durkin, 2003; Lai & Waltman, 2008; Vo, 2019). This is because “while questionnaires can provide evidence of patterns among large populations, qualitative interview data often gather more in-depth insights on participants’ attitudes, thoughts, and actions.” (Kendall, 2008: 77). Semistructured interviews have a planned list of questions but allow room for dialog, follow-up questions, probes, comments, and other changes depending on the context the interviews (Bryman, 2016). In this study, the researcher contacted with the respondents in advance to arrange the interviews. The time spent for the interviews was quite flexible to ask more probing questions and obtain comments.

Once completing the entire questionnaire responses collection, semistructured in-depth interviews were carried out with (i) six educators of the six sampled vocational colleges who are in charge of training curricula and OJT programs and (ii) 11 technical managers and employers from 11 companies having in liaison relationships with the colleges above. The interview period was in December 2020. The sample for this section of primary data collection was selected based on a geographic technique in which the research sites or vocational colleges were selected as being located in the peak industrial zones of Vietnam from the north to the south including Hanoi City, Bac Giang province, Vinh Phuc province, Thanh Hoa province, and Can Tho City, as stipulated in this chapter. Working at a vocational



college in Bac Giang province, the researcher has some direct and indirect connections with other vocational institutes in other regions. Through the interviews with the vocational educators, the researcher obtained the list and contact information of the enterprises which were being in relationship with each interviewee's college. Table 1 shows the information list of the interviewees who participated in this study:

**Table 1. Information list of interview participants**

<b>Participant</b>	<b>Gender</b>	<b>Nationality</b>	<b>Occupation</b>	<b>Residence</b>
VC1	Female	Vietnamese	Teacher cum Director of Human Resource Development Center	Bac Giang
VC2	Female	Vietnamese	Vice Director, Center for Student Admission and Job Creation	Hanoi
VC3	Male	Vietnamese	Head of Student Admission and Job Placement Department	Hanoi
VC4	Male	Vietnamese	Vice Director, Center for Student Admission and Job Consultancy	Vinh Phuc
VC5	Male	Vietnamese	Director of Job Placement Center	Thanh Hoa
VC6	Male	Vietnamese	Vice Director, Center for Training Association	Can Tho
AE1	Male	Vietnamese	Staff at Digital Appliances Business, Samsung Electronics Vietnam Co., Ltd.	Bac Ninh
AE2	Male	Vietnamese	Vice Head of Product QC Department, Canon Vietnam Co., Ltd.	Bac Ninh
AE3	Male	Vietnamese	Chief staff of Trial Test, R&D Department, Samsung Display Vietnam	Bac Ninh
AE4	Female	Vietnamese	Staff at Human Resources Department, HogiTech Co., Ltd.	Ha Noi
AE5	Female	Vietnamese	Head of Assembly Materials Unit, LSIS-Vina Industrial System Co., Ltd.	Ha Noi
AE6	Male	Vietnamese	Vice Head of HR Department, Vonta Vietnam Co., Ltd.	Ha Noi
AE7	Female	Vietnamese	Team Leader at Peripheral Devices Assembly Unit, Compal Vietnam Co., Ltd.	Vinh Phuc
AE8	Female	German	Vice Head of Transportation Equipment Department, Dai Thien Truong J.S.C	Ninh Binh

AE9	Male	Vietnamese	Team Leader at Industrial Equipment Maintenance Department, Hanoi Electricity J.S.C	Thanh Hoa (branch)
AE10	Male	Japanese	Team Leader at Electrical Safety Equipment Test Unit, Can Tho Thermal Power Company	Can Tho
AE11	Male	Vietnamese	Manager at General Repair Unit, Hyundai Thanh Cong Vietnam – Hyundai Vinh Long	Vinh Long (authorized agent)

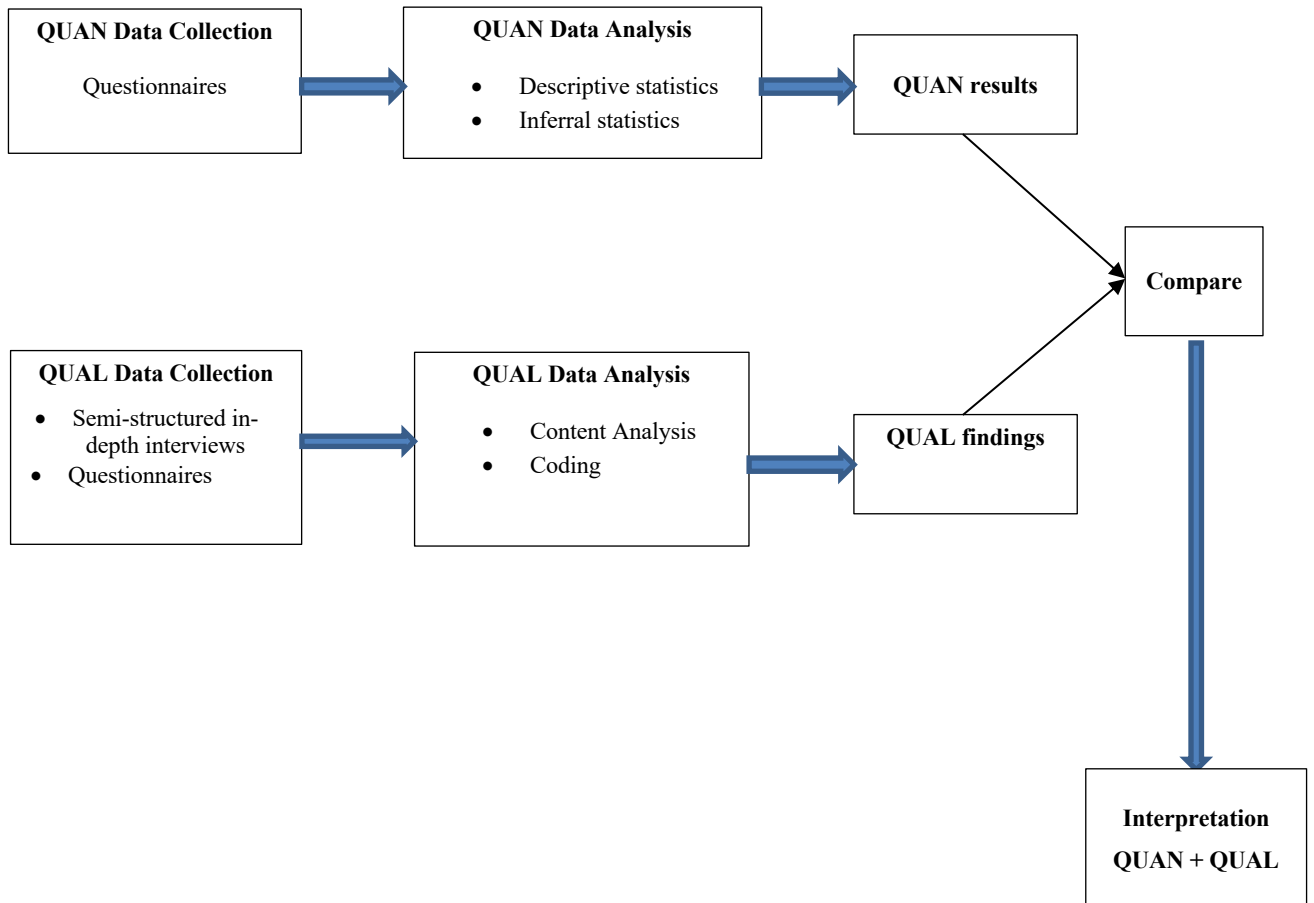
As far as the influence of COVID-19, the researcher had to shift from face-to-face to online and phone interviews. At the beginning of the interview conduction process, the researcher obtained connections with 10 educators from 10 vocational colleges, but four of them refused to participate in the interview. After finishing all the seven interviews with the educators, the researcher contacted with 18 associated enterprises' employers/managers, but seven of them refused to be interviewed by phone or video call.

The asking questions were designed in the form of grand tour questions that asked the participants to speak about something they know well in a fairly focused way (Spradley, 1979) through open-ended and close-ended questions.

Besides this, the second method to collect qualitative data was personal observation, which was completed at the research sites, as identified above. Unfortunately, due to the difficult situation caused by the COVID-19, which began in February 2020, the researcher was not able to return to Vietnam for fieldtrips to conduct site observation method. Hence, the researcher decided to replace the observation method with further in-depth interviews with the vocational educators in charge of business associations and the firms' employers to collect more sufficient qualitative data.

### 3.5. Analytical framework

As determined in the previous section, this study uses a concurrent triangulation design with the convergence model to collect and analyze the mixed data. As a result of this selection, two sets of data were analyzed separately to conclude distinctive results. Then the researcher continued by comparing the similarities and differences of both sets and integrating conclusions during the interpretation. Figure 3.5 presents the methodology and analytical framework to be employed in this study:



*Figure 3.5: Research methodology and analytical framework (Source: Researcher)*

### **3.6. Limitations and difficulties**

To connect with the colleges' head educators, the researcher used various means of contact, including email, telephone, the Zalo application, and a third party who could speak on behalf of the researcher connecting with other sites. The researcher contacted a total of 10 head educators from 10 different vocational colleges and obtained consent from six of them. One of them refused to allow their students to participate in the research due to time limitations, while another site had trouble with their facilities in responding to the online survey due to a lack of Internet service and shortage of personal smartphones or computers. The two remaining sites could not be contacted. The possible reasons might be incorrect email addresses or telephone numbers, perception as junk mail, or ignorance.

Contacting a total of 18 employers/managers from 18 different partner companies, the researcher obtained consent from 11 of them for interviews to be conducted in an online mode. Some of the remaining employers/managers said that they did not have enough time for an interview that was not directly related to their job as they were so busy, and others did not agree to be interviewed through telephone, messenger, or Zalo call, as they thought that these methods are not polite or formal enough. Others might have received the emails of the researcher in their spam box, the researcher used incorrect email addresses, or they might have ignored the researcher's emails.

### **3.7. Ethical issues**

The survey samples of this study are vocational students at six vocational colleges, as mentioned before. In the spirit of complying with regulations stipulated by the DVET, the

MoLISA, and local vocational colleges, the researcher had to obtain consent from the colleges' principal or educators in charge of student management before accessing the samples, rather than from each respondent. Gaining access to an organization is a political process in which the access is usually mediated by the gatekeepers (Bryman, 2016). In this study, the gatekeepers for the access to the questionnaire samples at the six vocational colleges are the principals and educators in charge of student and business cooperation affairs.

The online questionnaires were designed directly using Google link before being sent to each head educator to distribute them to all the sampled respondents. The survey link was sent to respondents in the way of each head educator. The designed questionnaire could be completed if and only if no questions were left out. There was a total of 580 students who responded to the questionnaires; however, some of the responses were done in a reluctant and perfunctory manner, namely the incorrect name of the training institution was entered, which led to an inability to classify the responses in each research site, and there were therefore removed from the analysis.

## **CHAPTER IV. RESEARCH FINDINGS AND DISCUSSION**

### **4.1. Introduction**

In this chapter, the researcher provides the analysis for the collected data and the interpretation of the results. The discussion on the findings is based on comparing two sets of data (quantitative and qualitative data) and three respects of perspectives which were from vocational students, vocational educators, and enterprises. The interpretation of the results is based on the initial hypotheses and arguments of this study and according to the nature of the findings. It also refers to the research questions to finalize the findings. In this regard, the researcher also links to other studies to show the novelty and importance of the findings in the research field.

### **4.2. Consistency analysis of Likert scales used in the study's questionnaire**

The most frequent form of questions used for the questionnaire of this study was the Likert scale, which resulted in ordinal data. As for the large number of scaled questions, the researcher decided to analyze the internal consistency (reliability) of the scales. Cronbach's alpha is the most common measure of internal consistency and is often used when there are multiple Likert questions in a survey/questionnaire that form a scale in order to determine whether the scale is reliable (Abbott, 2017).

In this study, the Likert scales used in the questionnaire include three groups of items as "FE (Facilities & Equipment of the college)", "BAA (Business Association Activities)", and "OE (OJT evaluation)".

Upon analyzing the reliability of the scale “FE”, Figure 4.2a indicates the  $\alpha$  coefficient = 0.853, which shows a high level of internal consistency. Figure 4.2b indicates the  $\alpha$  coefficient = 0.940, which is an excellent level of internal consistency. Figure 4.2c indicates the  $\alpha$  coefficient = 0.925, which is also an excellent level of internal consistency.

Reliability Statistics			Reliability Statistics			Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.853	.854	7	.940	.940	6	.925	.927	19

**Figure 4.2a:** Reliability analysis of scale “FE”

**Figure 4.2b:** Reliability analysis of scale “BAA”

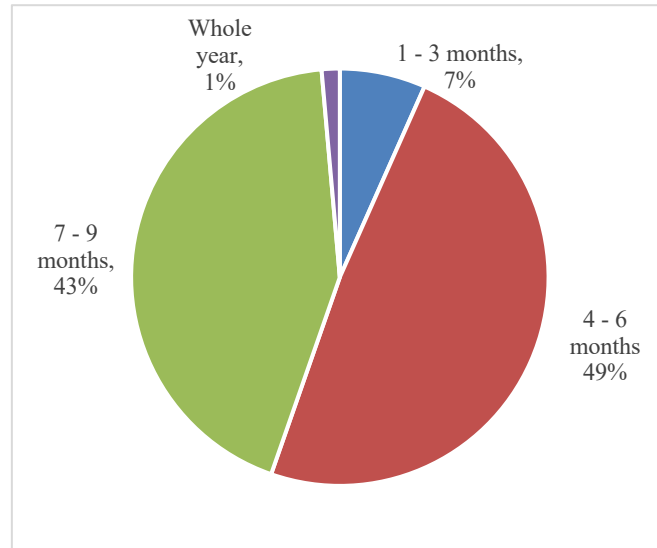
**Figure 4.2c:** Reliability analysis of scale “OE”

(Source: Cronbach’s alpha analysis by the researcher)

From this measurement, it can be concluded that the questionnaire and these scales are extremely reliable to be used for the purpose of this study.

### 4.3. Time allocation for school-based learning and in-company training

Based on the frequency analysis of in-school study time from the six sampled vocational colleges, more questionnaire respondents studied theory at their colleges for 4 - 6 months a year on average (49%), and the remaining 43% had in-school learning from 7 - 9 months in an academic year (Figure 4.3).



**Figure 4.3:** Percent frequency of in-school study time  
(Source: Creation from Questionnaire Responses)

From the data obtained from the interviews with vocational educators who in charge of business association duties and training affairs, the average time for school-based learning of each student was 7.4 months a year as shown in table below by calculating the mean of in-school study time.

**Table 2.** In-school study time (Source: creation from interviews)

<b>Respondent</b>	<b>In-school study time (months)</b>
VC1	7
VC2	8
VC3	7.5
VC4	8
VC5	7
VC6	7
<b>Mean</b>	<b>7.4</b>

So the average in-school time of a student was 7.4 months, as stated by the educators. In the Vietnam VET system, an academic year at nationwide vocational colleges is normally carried out in 10 months for both of theory and practice (Nguyen et.al., 2017). It can clearly



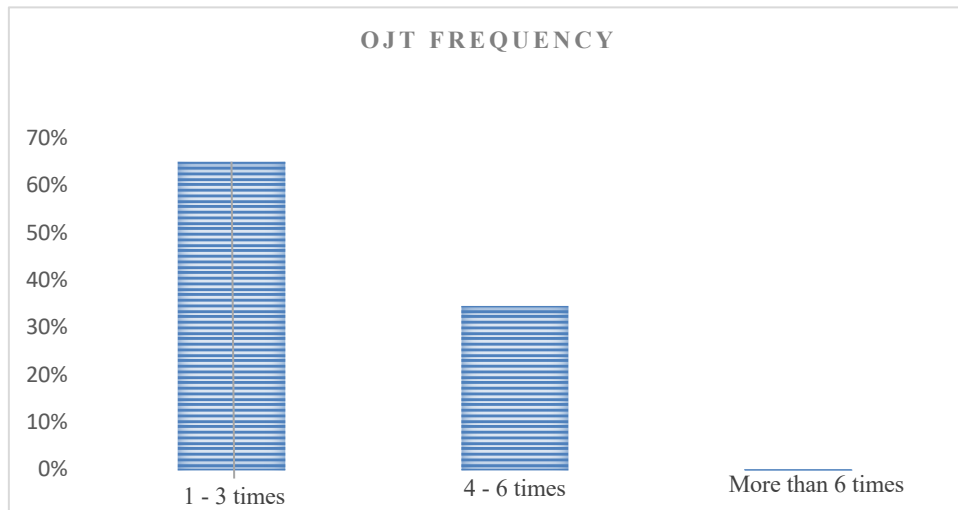
be seen that in the six sampled sites, the total school-based time is allocated much more than in-company training time.

According to BIBB (n.d.), in the framework curricula of the German Dual VET program, 60-70% of the time in an academic year is allocated for in-company training, and only 30-40% is for school-based learning. This standard should not be directly transferred to other countries without considering their specific conditions and institutional development processes. Every country that adopted the German Dual VET model should modify its framework curricula based on their own conditions. Notwithstanding, most of Vietnamese institutions have been allocating training time in stark contrast to German standards, with 70% for school-based learning and 30% for in-company training in an academic year. Furthermore, so far, in the research field of VET in Vietnam, no researcher has conducted any investigation at any vocational institute in terms of time distribution between theory and practice. Mori et. al. (2009) discuss the promotion of technology transfer by partnership between institutions and FDI enterprises. Phan (2017) mentions the college-enterprise associations in meeting with human resource demands at the industrial parks at local levels. Not only arguing that OJT is the most important factor in developing the VET system in Vietnam, this research also went in depth by investigating time distribution between OJT and in-school learning.

#### **4.4. Frequency of OJT in a year**

Based on the questionnaire responses, 65% of the respondents answered that they have undergone OJT one to three times in an academic year. Only 35% said that they underwent OJT three to six times a year. No one responded that they had participated more

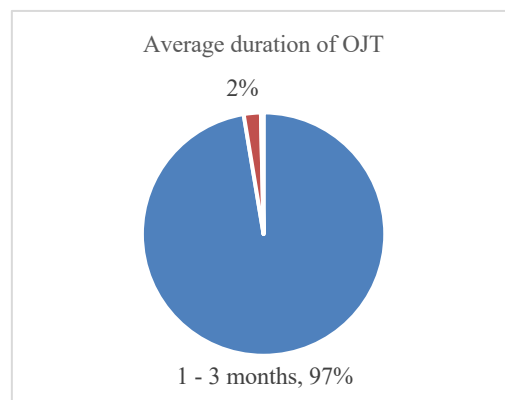
than six times in OJT in a year. The frequency of OJT provided by vocational students is illustrated in Figure 4.4.



**Figure 4.4.** Frequency of OJT in a year  
(Source: Creation from Questionnaire Responses)

#### 4.5. Average duration of OJT

Based on the results, 97% of questionnaire respondents answered that all OJT were organized within 1 – 3 months. Only 2% responded with 4 – 6 month OJT (Figure 4.5a).



**Figure 4.5a.** Average duration of OJT according to questionnaire respondents  
(Source: Creation from Questionnaire Responses)

Organizing OJT programs or sending out students to undergo practical training at enterprises is a necessary activity implemented at all six sampled sites, according to all six interview respondents. Based on the collected data, the average length of time to be spent for OJT at each of the six sampled research sites was 2.6 months, as shown in Table 3.

**Table 3.** Average duration of an OJT (*Source: creation from interviews*)

<b>Respondent</b>	<b>Length of time spent for each OJT (months)</b>
VC1	3
VC2	2
VC3	2.5
VC4	2
VC5	3
VC6	3
<b>Mean</b>	<b>2.6</b>

Respondents VC2, VC3, and VC4, who are educators from the research sites 2, 3, and 4, respectively, said that their colleges often organize one OJT session in a school year that lasts around 2 months. According to respondent VC4,

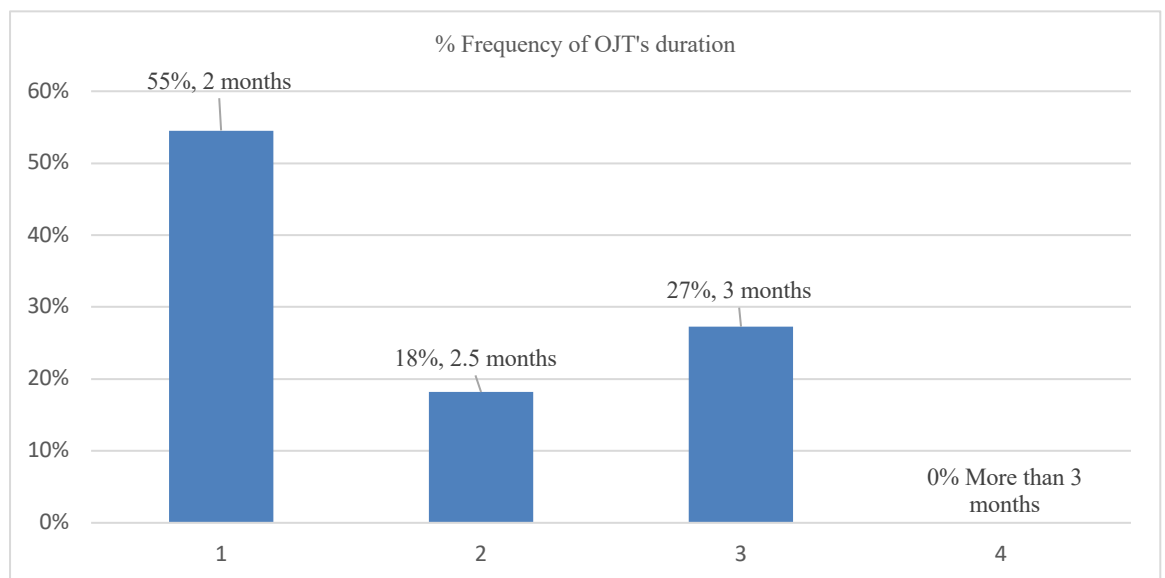
*A 2-month period is not enough for students to acquire sufficient knowledge, practical skills as well as the working style and technologies of the company. However, under the curriculum established by the DVET and the suggestion of company, my college can only proceed with one OJT per year not exceeding 2 months to ensure the total study time as planned. (Interview, 28/12/20)*

According to respondent VC6,

*Three months is quite good enough for an OJT program, because not only OJT, but students must also complete all courses as specified in the curriculum to get qualified. It means that they should concentrate more on the school's subjects, including both*

*of theory and practice, to meet the requirements/criteria of a school year. (Interview, 21/12/20)*

According to Figure 4.5b, of all the 11 interview respondents from the enterprises, 55% said that their companies often have 2 months for each OJT session, and 18% said 2.5 months; 27% responded they had 3-month OJT, and no one answered more than 3 months-length for OJT. This means that the average duration for each OJT to be organized by the 11 companies in this study was 2.4 months.



**Figure 4.5b:** OJT average duration according to interviewees' responses  
(Source: Creation from Interviewees' Responses)

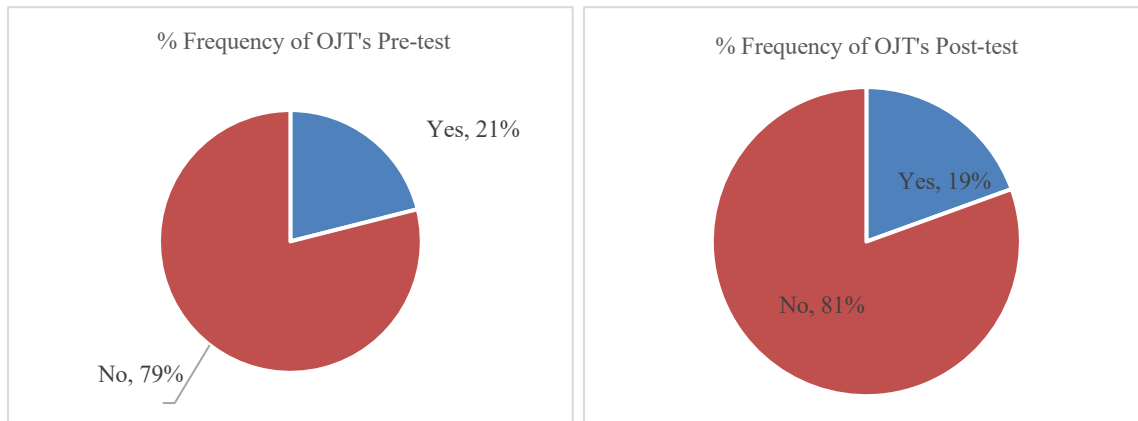
Of the sampled vocational students, 97% reported that they had often participated in one to three OJT sessions in a year, and each OJT session lasted from 1 – 3 months. Additionally, according to educators and enterprises' staff, the time to be distributed for in-school learning was 7 – 8 months, and the 2 – 3 remaining months were for OJT, and OJT was organized for each faculty once a year. After comparing the three perspectives above,

the researcher concluded that OJT has been held once a year in a period of 2 – 3 months for at least each faculty of the six sampled colleges.

The literature mentions recommendations which were discussed and given by Tran (2006), Vu (2017), Vu (2018), and Vo (2019a) to improve the Vietnamese VET system, which mainly include the management policies. No practical application solution has previously been suggested. Regarding to in-company training, in the framework curricula of the German and Japanese Dual models, the learners have school-based learning and in-company training interwoven on a weekly basis, with a ratio of 2:3, respectively (Bliem, 2014; MoHLW, 2016). This means that every week, learners have 2 days of learning in their colleges and 3 days for in-company training. Notwithstanding, in the Vietnamese VET system, OJT has often been organized on a monthly basis, once a year in 2 – 3 months, as concluded from the data analysis above.

#### **4.6. Pre- and post-tests of OJT**

Up to 79% of the questionnaire respondents said that they did not take any tests before entering the OJT, and 81% responded “No” to participating in OJT post-tests (Figure 4.6). This means that most OJT held by the six research sites did not include any pre- or post- tests at all to measure students’ progress on occupational knowledge and practical skills.



**Figure 4.6.** Percent frequency of OJT pre- and post- test  
*(Source: Creation from Questionnaire Responses)*

When asked, “Has your company ever organized any pre- and post- tests of OJT to measure students’ qualification?”, 38% of enterprises interviewees said that their companies have regularly held the tests for students both before and after each OJT session that include the questions related to occupational knowledge, attitudes, and skills designed to be compatible with the manufacturing field and the actual status of the machinery and equipment of the companies. These tests aim to measure students’ progress after each OJT session.

Of all the interview respondents from the enterprises, up to 62% responded they had not held any tests before or after each OJT session. Respondent AE4 said that her company often offered 2-month OJT for students from vocational colleges and that there is so much work to be done, so they do not have enough time for any tests (Interview, 7/1/21). During each OJT period, only one or two staff members would be assigned to train and supervise the interns, and there are several tasks for the interns to do, and thus, her company believes that the qualification tests are impossible and not needed.

Respondent AE11 said,

*We organize several OJT sessions every year. Each session is participated in by different partner colleges. We are manufacturing and trading on automobiles, so we offer OJT programs to vocational students from automobile training majors. Pre- and post- tests of OJT are unnecessary because some of following reasons: (i) first, the organization of a test needs quite a big volume of human and financial power. It means that we need staff in charge of preparing test questions and facilities, and others will be in charge of supervising the tests and evaluating the results. We also need a certain amount of expense for ensuring machines and equipment to have the best quality for the accuracy of the tests; (ii) second, the interns are often assigned simple tasks that do not play key roles in the manufacturing chains of our company, so it is enough for several staff members to train and guide them during the OJT period; and (iii) third, we think that the evaluation examination should be done at the colleges not at companies, based on the actual progress of training. (Interview, 13/1/21)*

Additionally, according to managers'/employers' interview responses, 16% of respondents said that their companies have often organized only OJT pre-tests, and 21% responded that only a post-test is held.

From the analysis above, a very large percentage of vocational students reported that they have never undergone any pre- or post-test of OJT. This means they participated in their internships without knowing anything about their level of progress in knowledge or skills, because no one at the companies had judged it.

Additionally, based on data analyzed from the interviews, most of the enterprises had never organized any tests for interns before or after an OJT session. Some enterprises claimed that they did not have enough time for any assessment tests during their OJT program, and

others stated that in-progress evaluation tests are not necessary and are wasteful of physical and human resources to conduct at the companies.

Jack and Patricia (2012) state that the pre/post-test is a common form of evaluating programs in terms of improving the knowledge of the participants. To determine the gains in knowledge and skills of the trainees, an identical test should be completed two times, the first is at the beginning and the last is conducted during the final OJT session. TVET Vietnam News (2017) indicated that the common evaluation methods used for the learning process are surveys and performance records, and these have mostly been used for theoretical learning programs, rather than occupational/vocational training. Trines (2017) states that in most of nationwide educational institutions in general, only post-tests are executed to evaluate learners' progress. If so, the content of the pre- and post-test is not identical. No article mentions pre/post-test in VET, regardless of their significance in measuring learners' progress and attitudes, and the curriculum's effectiveness.

#### **4.7. Business association activities**

##### **4.7.1. Students' perspectives**

Table 4, which was calculated from data obtained from the questionnaires, points out that OJT has been deployed at all six research sites on a regular basis (52% of responses said "often" or "very often" (BAA6 of Table 4) but not well in terms of comprehensiveness. Of the respondents, 70% answered that their colleges have never publicized any information list of affiliate enterprises on to homepages or other colleges' media (BAA1 of Table 4). Even the recruitment notices were rarely shared with students and parents according to 73% of the



responses (BAA2 of Table 4). One other important aspect of a good Dual VET system is regular organization of conferences or workshops to exchange knowledge between the colleges and enterprises, in which vocational students can communicate directly with enterprises to ask about relevant technologies, practical skills, and even recruitment requirements. However, 71% of respondents said that their colleges had never held any such conferences, while the number of responses stating that such conferences had been held often or very often was very low (BAA3 of Table 4). According to standards of the German Dual system, as mentioned in previous chapters, students would regularly be trained at the companies for 3 – 4 days a week, and during this period, the company staff would take charge of teaching practical skills using school's equipment base at the schools for 1 – 2 days. Nevertheless, at the six research sites of this study, 73% of the respondents said they had never taken part in teaching and practice guidance at any college (BAA4 of Table 4). The colleges and enterprises might be consistent in terms of the majors of training and production; however, the equipment use might be different. Thus, actual visits to companies are held in most of German vocational institutes on a regular basis. Based on the responses, 73% of the vocational students answered that there was no actual visit to companies organized by their colleges at all, and 10% said that they were rarely held (BAA5 of Table 4). This kind of site visit to companies is for either the same or different manufacturing fields for one or couples of days, which are often organized for vocational students to observe industrial production lines or to see how the machinery and equipment operate, etc. The last criteria to evaluate a good business association program is organizing OJT, and based on data collected through the questionnaires for the six research sites of this study, up to 47% respondents said that their colleges seldom organize OJT (BAA6 of Table 4).

**Table 4.** Frequency of business association activities (*Source: creation from questionnaire responses*)

<b>ID</b>	<b>Business association activities</b>	<b>Never (%)</b>	<b>Rarely (%)</b>	<b>Often (%)</b>	<b>Very often (%)</b>	<b>TOTAL (%)</b>
BAA1	Publicizing a list of partner businesses with the college	70%	8%	18%	4%	100%
BAA2	Providing information about recruitment needs of enterprises	5%	73%	18%	4%	100%
BAA3	Organizing exchange conferences between college and enterprises	71%	12%	14%	3%	100%
BAA4	Enterprise staff participate in teaching and practice guidance at the college	73%	13%	12%	2%	100%
BAA5	Organizing actual visits to companies	73%	10%	15%	2%	100%
BAA6	Students take part in on-the-job training at enterprises	0%	47%	45%	7%	100%

A customer survey form was used in the questionnaire with Likert-scale questions for the respondents to rate the frequency of business association activities at their institutions (Peter, 2012). Analysis herein indicated that most vocational students had negative vieww toward the frequency of business association activities held by their colleges, as shown in the large percentage of the “Never” and “Rarely” options. Thus, according to the perspectives of the vocational learners, all sampled sites in this study had superficial cooperation with the partner enterprises.

#### **4.7.2. Educators' perspectives**

When asked about the main activities executed to maintain and develop cooperating relationships with the enterprises, the sampled educators responded with different ideas during the interviews.

##### **4.7.2.1. Inviting enterprises to cooperate in training**

Of all six interview respondents from the vocational colleges, only respondent VC1 said that her college is always positive in finding chances to participate in job affairs and business connection events inside and outside of the province (Interview, 16/12/20). Based on invitations or information from the MoLISA, the DVET, other relevant state agencies, and newspaper and magazines, this college always attends the events held by some representatives because, according to respondent VC1, these occasions are good chances to connect with enterprises and to draw their attention to her college.

Only respondent VC1 answered that her college is always active in connecting with and inviting the enterprises inside and outside of the province to cooperate in training students (Interview, 16/12/20). The college has sent brochures and leaflets out to enterprises in the fields of manufacturing compatible with training sectors that introduced key information related to training majors, qualifications, motivation of students, etc. The college has also been always active in drawing the attention of enterprises through various occasions, such as job fairs, VET conferences, or business workshops, for instance.

Notwithstanding, respondent VC1 said that her college has often formulated an SWOT analysis to identify the company's potential for a cooperation. After the company

visit, the college filled out all the information regarding the cooperation in the SWOT form, as shown in Table 5.

**Table 5.** SWOT analysis of potential partner company (*Source: creation from CVI's response*)

	<b>Positive</b>	<b>Negative</b>
<b>Internal</b>	<p><b>Strengths</b></p> <p>Fields and expertise from within the company that are helpful for the college:</p> <ul style="list-style-type: none"> <li>- well-trained and experienced staff</li> <li>- state-of-the-art equipment for production</li> </ul>	<p><b>Weaknesses</b></p> <p>Potential negative impact from within the company:</p> <ul style="list-style-type: none"> <li>- negative attitude of managers in cooperating</li> <li>- missing safety regulations or cleanliness</li> </ul>
<b>External</b>	<p><b>Opportunities</b></p> <p>Public interest of the company that could be strengthened through the cooperation activities:</p> <ul style="list-style-type: none"> <li>- good social responsibility awareness</li> <li>- engagement in chambers and associations</li> </ul>	<p><b>Threats</b></p> <p>Interest that could negatively affect cooperation:</p> <ul style="list-style-type: none"> <li>- never hired VET graduates</li> <li>- no visible Human Resource Development activities</li> </ul>

Regarding the organization of OJT, except for the first research site, proactive business connections have remained weak. The literature shows the case of HVCT with its effort to connect enterprises through workshops and events related to sewage treatment technology (iMOVE, 2019). This institute has always been proactive in finding and connecting with wastewater companies to invite cooperation in its Sewage Engineering Technicians program. The VET system of Vietnam is increasingly developed according to an industry-led direction, taking industrial demands as the training focus and target (Nguyen, 2017). Accordingly, lack of initiative in connecting with enterprises can also be seen as a failure of Dual model adoption.

As reported by the ADB (2020), the call for VET investment in Vietnam has not met the development requirements, and this can be construed as a case of a lack of cohesion between vocational institutes and enterprises regarding investing in human resources through training cooperation.

#### **4.7.2.2. Publicizing list of partner enterprises, new technology, and recruitment information**

For students and anyone new to business associations, posting news to websites, newspapers, television programs or other social media networks is a very smart way to help learners get closer to the industry led in vocational training to allow them to understand the importance of upgrading their skills, as stated by respondent VC1 (Interview, 16/12/20). Respondent VC1 from research site 1 is the only person who came up with this idea when being asked about the implementation of business association activities. The news to be publicized was connected to partner enterprises, including advanced technologies, manufacturing processes, machinery and equipment, and even recruitment notices. Students and people interested in OJT, job opportunities, and technologies could refer to this information to determine their own direction. The first research site has done well not only in developing good relationships with the new and existing partner enterprises but also in keeping its students aware of its job-oriented approach.

The ADB (2020) reported on the underestimation of the VET stakeholders, including students, parents, and employers on the role and importance of VET to other educational subsectors. Additionally, a suggestion given by a sampled respondent was that each vocational institute should have information related to its training curricula, mission, partner

enterprises, OJT programs, etc. updated on its website that is convenient for all stakeholders to follow.

#### **4.7.2.3. Inviting enterprises to visit the college**

Respondents VC2 and VC6 said they invited enterprises to actual visits at the college (Interview with respondent VC2, 21/12/20; Interview with respondent VC6, 21/12/20). Respondent VC6 said that his college had sent letters of invitation or given oral invitations to enterprises interested in training majors and qualifications of students as well. The enterprises were taken to visit the facilities, machinery, equipment, and workshops of the college.

#### **4.7.2.4. Organizing workshops/contests on hands-on skills with participation of enterprises**

Respondents VC1 and VC3 stated that they organized workshops and contests on hands-on skills with the participation of enterprises when being asked about strategies to implement OJT programs at their colleges (Interview with VC1, 16/12/20; Interview with VC3, 25/12/20). These events revolve around the learners' initiatives and performance of workmanship, all related to apprenticeships.

### **4.8. Number of partner companies**

Respondent VC1 said that her college has been developing relationships with 25 companies so far from the fields of industrial engineering, including electronics and

telecommunication, electricity, information technology, mechanical processing, metal cutting, refrigeration, automation, and automobile technology (Interview, 16/12/20). Additionally, according to respondent VC1, her college has students from five faculties that are training key majors of industrial engineering. Each faculty has been closely cooperating with five to six companies in the manufacturing field compatible with the training majors of that faculty. According to her opinion, OJT has been held once every year for each major, based on an agreement contract among the faculty head, the Center for Human Resource Development of her college, and the enterprises. Due to the rather high number of partner companies, her college could have a large range of selection after considering the training content and benefits offered by the companies, and then it would choose the best one that is most compatible and beneficial with students' majors and motivations.

According to respondent VC2, her college is now in cooperation with seven partner companies, but on an irregular basis.

*We have a total of five faculties training the occupations, such as electricity, electronics, refrigeration, mechanical engineering, and automobile technology. With the exception of the electronic faculty, which has a relationship with three enterprises in the same field, each remaining faculty has only one partner company. Thus, based on the actual condition of the enterprises, some of faculties could not organize any OJT in a year. Moreover, we have no other choice when selecting affiliate enterprise for training students through OJT. Instead, of that, we provide comprehensive and further practical training courses at our college. (Interview, 21/12/20)*

When asked about the reason her college has a small list of partner enterprises, the researcher received the answer that the college has been facing with difficulty in inviting

enterprises to cooperate in training. Most enterprises that have refused association state that they do not appreciate the capacity, qualifications, or hands-on skills of the students.

Respondent VC3 said that his college does not have very good relationship with 13 companies that cooperated in training practical skills for students through OJT (Interview, 25/12/20). His college organizes one OJT session a year, for each faculty. Upon selecting enterprises to cooperate for each session from the list, the college sent invitations to companies and went through signing contracts. Respondents VC4, VC5, and VC6 stated the numbers of their partner enterprises are five, six, and four, respectively (Interview with respondent VC4, 28/12/20; Interview with respondent VC5, 28/12/20, Interview with respondent VC6, 21/12/20).

From the analysis above, the researcher concluded that the number of enterprises in cooperation with vocational colleges under this study is still small. Except for the first research site, with 25 partner enterprise relationships, and the third one with 13 enterprises relationships, all of the remaining were associated with less than 10 enterprises, including even just four, five, six, or seven enterprises linking with the sixth, fourth, fifth, and second research sites, respectively. Meanwhile, in the Vietnamese vocational education system, there are often at least five specialized faculties or departments in each college, and each faculty oversees training for one occupation sector or industrial field, such as electronics, telecommunication, electricity, information technology, mechanical engineering, and automobile technology. Basically, every faculty of a college must have at least one partner enterprise for conducting OJT programs. Therefore, the fact that there are too few affiliated companies might significantly affect the effectiveness of the Dual training program.

Looking back to the current shortage of skilled workers/technicians in domestic industries and the bridging relationship between VET institutions (supply side of human



resources) and enterprises (demand side of human resources), the literature shows the fundamental standards of the German and Japanese Dual systems in which vocational learners have the chance to undergo actual working environments to acquire hands-on skills close to industrial development situations (Barbel et. al., 2014; MoHLW, 2016; Nguyen, 2017; Hockenos, 2018). Accordingly, in the German and Japanese Dual systems, most of vocational institutions have close associations with many local industries, and this is the reason their VET programs have often been called as industry-led ones.

According to Bliem et. al. (2014), the mutually beneficial cohesion between vocational colleges and enterprises is one of the success factors of Dual VET in Germany, Japan, Australia, and other developed countries. The more the college-enterprise relationship develops, the more effective Dual VET will be. International and Vietnamese researchers (Mori et. al, 2009; Vo, 2019; Pham et. al., 2017; John et. al., 2017; Vu, 2017; Vu, 2018; Cao, 2011) discuss the depth of this kind of relationship, which indicates how close the cooperation is, but none of them mention the width, as suggested in this study, that colleges should create partnerships with many enterprises rather than focusing on a few enterprises, in order to enhance effectiveness when choosing OJT programs proposed by the partners.

## **4.9. Training content of OJT programs**

### **4.9.1. Educators' perspectives**

When asked about which of college or enterprise would oversee setting up the training content of OJT, only one (VC1) of the six respondents answered that the content of OJT has been composed based on mutual agreement between the college and the enterprises

(Interview, 16/12/20). Relying on actual progress, direction, content, the kind of sector to be trained, the content to be constructed for OJT might be the best fit for students' occupations, majors, and motivations. All the other remaining respondents said that the OJT content was fully the responsibility of the enterprises.

Responding to the question on the main content of OJT, respondent VC4 stated that upon entering an OJT, students were provided a few lessons on the company's regulations and safety rules, and other time was spent introducing production processes, technologies, machinery and equipment, and factories, etc. (Interview, 28/12/20). Then, the enterprise assigned payable jobs to be completed for each student. During the 2 months of OJT, the college also asked educators or staff in charge of business associations to be onsite at the companies for instruction and supervision.

In the opinion of respondent VC5,

*Since the business side is the lead unit for internship content, all jobs and training programs would be decided by the business. Our college has a limited number of affiliated enterprises, so it is impossible to request too much in terms of OJT content for students. We only asked a few teachers to the company to grasp the situation of students, including discipline, attendance, compliance with the rules, violations if any, etc. (Interview, 28/12/20).*

Different from the others, respondent VC1 said that the cooperation between her college and the enterprises is very close and effective (Interview, 16/12/20). This cooperation partly expresses in setting up OJT and training content. This means that the enterprises refer to the major and training process of the student to offer suitable OJT programs. It also expresses the mutual communication between the college and enterprises, during, and after OJT. In the pre-OJT period, enterprises send their staff to the college to organize seminars to

introduce students to the company and OJT programs, and at the same time, the college also takes students on actual visits to the enterprises. During the ongoing OJT process, the two sides have always maintained regular communication.

Two typical former Dual VET models conducted at the HVCT and Lilama2 institutions succeeded in reaching an agreement on all three sides, including the government, the institute, and the enterprise, in establishing and developing framework curricula (TVET Vietnam News, 2017). This is one important factor that contributed to the success of the German, Japanese, and other developed countries in Dual VET development. A job-oriented approach is the key for vocational institutions to be sustainable. Notwithstanding, as reported by the ADB (2020), the cooperation between vocational institutions and enterprises in the Vietnamese VET system lacks of cohesion. Through the analysis above, it is apparent that the college-enterprise cooperation in Vietnam is still a bit shallow. The role of the enterprise should be getting involved as much as possible right from the start of a Dual program to set up training curricula, etc.

#### **4.9.2. Enterprises' perspectives**

When asked about what content the interns should be trained during each OJT session, only 36% of respondents answered that their companies relied on colleges' curriculum and the training majors of students to set up the OJT content. Most companies provided the interns with OJT programs based on their own actual status of manufacturing and trading, regardless the relevance of the training majors of students.

Respondent AE6 said that the purpose of his company when offering OJT programs is to have a large number of short-term workers to ensure nonstop manufacturing progress

(Interview, 10/1/21). These interns might or might not come from relevant training majors, but they were still provided training to be competent to work as required. The important thing here is that the level of tasks for these interns to do is simple, including hands-on work following the instructions of the trainers.

Of the respondents, 100% answered that the content of OJT was created by enterprises solely based on the actual situation of manufacturing processes. No enterprise paid enough appropriate attention to and traced the real processes of in-school learning to the extent of specialized knowledge and skills the students have been being trained in.

When asked, “Apart from the given schedule, are there any chances for students to raise their voice related to work or upgrading advanced knowledge and skills?”, nearly a half of the respondents (46%) said that they have often organized pre- and post-meetings during the OJT process. In addition to this, if there was any problem or request, students could talk to direct supervisor/trainer or during the meetings. According to respondent AE7, in an OJT period, the number of tasks assigned to the interns was fixed as a plan, and if he or she wanted to have comprehensive practice to upgrade their skills or try practicing with advanced machines or tools, it must be approved by the directors of the company (Interview, 4/1/21). The procedure of getting approved often took from several days to 1 week. According to respondent AE7, OJT schedule should be carried out as planned to ensure the compatibility with the prescribed framework curriculum.

Regarding the process of carrying out an OJT program, according to respondent AE1 (Interview, 6/1/21), when preparing to enter the peak stage, the production line might be short of manpower in some segments, so the company would contact the partner colleges to get the interns to work. Then, the college arranged a schedule for the OJT based on the curriculum and actual in-place training progress before sending out its students to the factory.

At the company, the interns were assigned tasks to be done and were paid monthly under the supervision and guidance of the trainers who are senior technicians or technical managers of the company. The working positions of the interns were determined depending on the actual situation of the production line. All interns worked at the same level, with no distinction between the good and the poor.

#### **4.10. Students' evaluations on the real implementation of OJT programs**

Peter (2012) states that the Student Outcomes Survey is a method to measure a learner's satisfaction with the training quality, in which the participants are asked to rate their satisfaction with different aspects of their training, grouped under three themes: teaching, assessment, and generic skills and learning experiences. Trinh (2003), Chan (2006), Mori et. al (2009), and Vu (2018), in their research, studied on the Vietnam's VET system and the college-enterprise cooperation and particularly point out the shortcomings and suggest solutions to move forward, but no student satisfaction survey has been conducted.

This study uses 5-level ascending Likert scale questions for respondents to rate their satisfaction toward the implementation and quality of the undergoing Dual VET in terms of business association activities.

Of the questionnaire respondents, 60.5% did not agree that OJT brought them the chances to upgrade their practical skills or understand the production technologies of enterprises (Table 6 – OE7). Based on the survey, 52.6% said that the specialized knowledge acquired from their colleges was not utilized or applied during the OJT process (Table 6 - OE8). Only 2.7% of respondents agreed that the knowledge and practical skills learned at their colleges are similar to or consistent with OJT (Table 6 – OE10). Similarly, only 3%

indicated that there is compatibility of machines and equipment between their colleges and enterprises (Table 6 – OE11). Moreover, only 5.6% stated that they were respected by the enterprises' staff, while the number who disagreed is 51.5% (Table 6 – OE13). Most of respondents (69.3%) indicated that they could not freely express their personal ideas and desires related to OJT training content (Table 6 – OE14). Surprisingly, up to 68.9% of respondents stated that the knowledge acquired from OJT was not useful for them (Table 6 – OE15). Based on the survey, 69.3% did not feel more confident in their expertise and majors after completion of OJT (Table 6 – OE16). Up to 71.1% of all respondents from the six research sites were unsatisfied with the knowledge and skills to be trained in from OJT and 70.9% concluded that the OJT programs were not as effective as they expected (Table 6 – OE18 & OE19).

**Table 6.** Percent of evaluation of OJT activities (%) (*Source: creation from questionnaire responses*)

<b>ID</b>	<b>OJT implementation aspects</b>	<b>Total</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
OE1	Students are informed of the OJT plan, content, regulations of the enterprise by its staff	99.5	11.2	20.5	33.5	29.8	4.4
OE2	Enterprises assign staff to guide students during the internship	99.6	5.1	19.1	40.5	28.4	6.5
OE3	Your college assigns teachers to supervise your internship	99.5	5.3	15.8	38.8	31.8	7.9
OE4	Students involved in OJT as planned	99.6	7.4	16.1	33.2	30.5	12.5
OE5	Enterprises hold meetings to evaluate/learn from experience during OJT	99.5	1.9	22.6	57.7	14.2	3.0

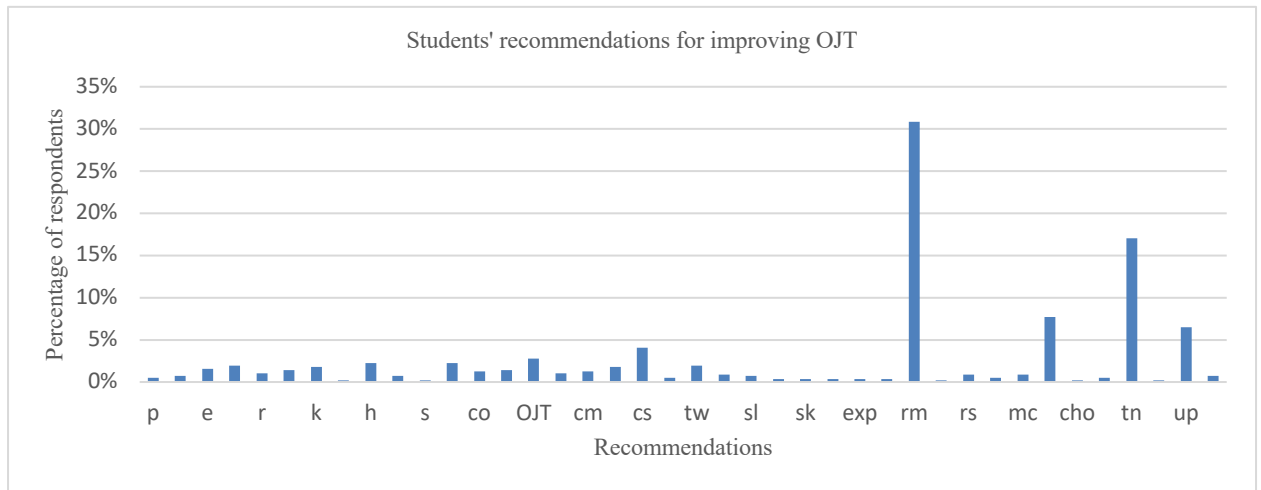
OE6	Content of OJT programs is related to your major	99.3	16.5	12.3	55.4	13.0	2.1
OE7	Students are given chance to upgrade practical skills, understand about production technologies of enterprises	98.9	18.9	41.6	23.2	13.2	2.1
OE8	Specialized knowledge learned at your college is utilized in OJT process	99.5	24.2	28.4	32.8	12.1	1.9
OE9	Practical skills learned at your college are manipulated in OJT process	99.5	23.5	20.5	41.1	12.3	2.1
OE10	Knowledge and practical skills learned at your college are different from OJT	99.1	1.1	1.6	57.5	34.9	4.0
OE11	Machines and equipment of enterprises are different from your college's.	99.1	1.4	1.6	49.3	41.9	4.9
OE12	Students are entitled to remuneration and have the opportunity to work at the enterprise after graduation	99.3	0.5	1.9	44.4	49.1	3.3
OE13	Students are respected by enterprises' employees	99.5	2.6	3.0	42.3	48.9	2.6
OE14	Students can freely express personal ideas and desires related to OJT content	99.1	3.0	66.3	12.8	14.0	3.0
OE15	Knowledge acquired from OJT is useful for you	99.1	1.4	67.5	13.3	14.7	2.1
OE16	You feel more confident in your expertise after finishing the OJT	99.5	1.4	67.9	15.4	12.8	1.9
OE17	You desire your college to continue organizing other OJT in coming time	99.3	1.9	3.0	48.4	43.2	2.8

OE18	You are satisfied with knowledge/skills trained in OJT	99.5	2.5	68.6	13.3	13.2	1.9
OE19	The OJT sessions were as effective as you expected	99.5	2.8	68.1	12.6	14.2	1.8

#### 4.11. Students' recommendations on improving OJT

##### 4.11.1. Expectations about the compatibility of OJT content with the occupational major

As shown in Figure 4.11, the largest proportion of respondents (31%) recommended that vocational students should have been taken in OJT of which training content is compatible with their majors. For instance, students from the electronics major should take part in OJT with the content to be trained in and practiced related to the electronics field.



**Figure 4.11:** Students' recommendations on improving OJT  
(Source: Creation from Questionnaire Responses)



#### **4.11.2. Desire to be trained by qualified trainers**

Based on the survey, 17% said that they want to be trained and supervised by qualified and enthusiastic trainers from both of companies and colleges. Additionally, there should be close supportive cooperation between companies' trainers and colleges' educators. No previous study has mentioned the qualifications of in-company trainers. According to BIBB (n.d.), in the German Dual VET system, a company can outsource or assign in-house coordinators to handle with OJT. The hint is using the best people for this duty.

#### **4.11.3. Desire to attend the workshops communicating with enterprises**

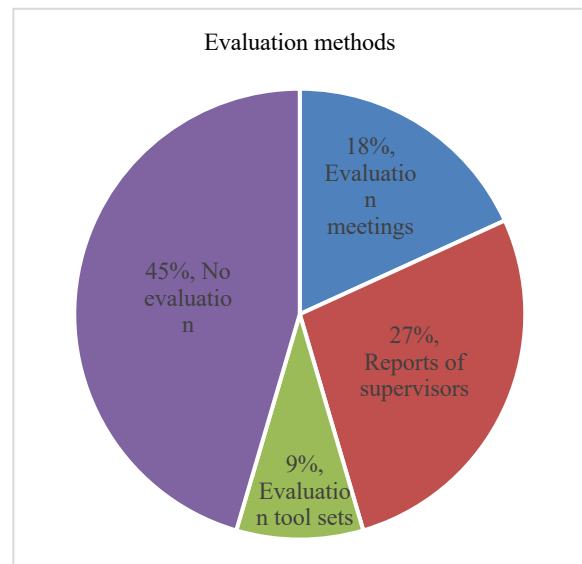
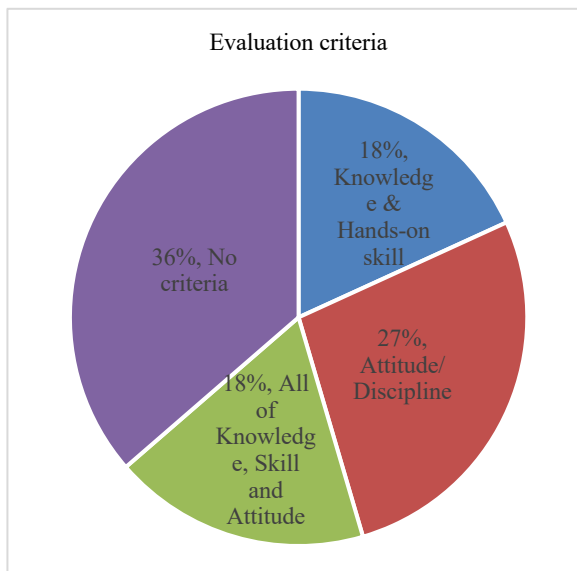
Based on the survey, 8% of the respondents desire for workshops to be organized at their colleges with spirit of school-enterprise association on a regular basis. On those occasions, they can have the chance to understand more about interested companies as well as new technologies, manufacturing processes, and recruitment requirements.

In light of learning know-how to carry out a good OJT in Vietnam, the literature presents some significant domestic and international cases of OJT organization in which the German system has interwoven in-school learning and in-company training on a weekly basis throughout an academic year (Barbel et.al., 2014). The Japanese Dual system has adopted two types of training: OFF-JT and OJT for the first academic year and OJT for two remaining years, and the second type is the same as the German one in alternating OFF-JT and OJT during a 3-year course (MoHLW, 2016). Meanwhile in Vietnam, there have been two pilot models adopting the German Dual system conducted so far at HVCT and Lilama2 (Lilama2,

2018; iMOVE, 2019), but these two programs have not been sustainable due to a lack of enrollees.

#### 4.12. Criteria and methods of evaluating trainees’ progress

For the question, “What criteria and methods were used to evaluate how well a trainee has progressed?”, the responses collected from enterprise managers are summarized in Figures 4.12a and 4.12b.



**Figure 4.12a:** Evaluation criteria for trainees’ progress

**Figure 4.12b:** Evaluation methods for trainees’ progress

*(Source: creation from interview responses)*

Among respondents from enterprises, up to 36% said that their companies have never used any criteria evaluating the interns’ progress (Figure 4.12a), and 45% answered that their companies have neither conducted evaluations nor used any methods to evaluate the progress of their interns during or after OJT programs (Figure 4.12b). This indicates that these

companies have treated the trainees who come from vocational colleges like other ordinary workers.

Regarding commonly used criteria to evaluate a trainee's progress, 18% of enterprises gave evaluations on trainees' progress according to knowledge and hands-on skills, 27% based on attitude or discipline only, and only 18% relied on all of criteria, including the knowledge, practical skills, and attitudes of the trainees (Figure 4.12a). So, the percentage of enterprises that included all three aspects of OJT evaluation (knowledge, skills, and attitudes) is very small.

Besides some popular methods of evaluating progress like regular meetings and reports, as raised by most of respondents, according to respondent AE3 (28/12/20), his company has used a number of toolkits for evaluating its trainees. These toolkits were designed by his company and are used only for the purpose of evaluating the company's employees and trainees. An evaluation toolkit includes key staff in charge of evaluating humans and techniques, sets of machines, and equipment and devices specialized in certain fields of manufacturing such as mechanical equipment and machinery, electrical and electronic devices, etc. that are used for testing only. These staff and equipment are used only for the company's purpose of evaluating the qualifications of workers through the skills tests of workmanship directly on the machines. The assessment results are normally used to improve the quality of the company's employees.

Many researchers discuss popular and effective learning evaluation methods, including surveys, interviews, tests, performance records, and observations. (Kaufman, 1994; Torres, 2005; Peter, 2012; Harshit, 2012; Jack & Patricia, 2012). Nevertheless, the evaluation measures recommended for the VET sector are few, mainly consisting of surveys and performance records. This study recommends the Kaufman Five Levels Model as the most

appropriate method to evaluate training quality. Deller (2020) describes about Kaufman's model as more practical than others (Kirkpatrick's, CIRO, Philips ROI) with the same purpose. That is definitely compatible to be used in VET system which is inclined toward apprenticeship. The five levels of Kaufman's model were modified by the researcher to be appropriate for the purpose of Vietnam's VET as follows:

Step 1a: Measure the resources invested in OJT, such as time and cost in developing materials

Step 1b: Evaluate interns' reaction to the OJT process

Step 2: Assess whether the OJT objectives for individual interns or small teams were met (For instance: Did they learn new skills?)

Step 3: Measure the practical impact of the benefits in Step 2 (For example: Are the interns applying their new skills when they return to their studies and for their future career?)

Step 4: Measure the greater benefits for the enterprises, such as increased profitability or reduced costs

Step 5: Evaluate the effectiveness of the OJT in relation to societal benefits (For example: How did OJT improve the company's ability to add value to its clients or society as a whole?)

The most important step is number 1a. Upon evaluating the benefits of OJT against the resources invested in, more training resources can be requested from company leaders, including, for instance, more better trainers and more modern equipment. This model is absolutely beneficial for the enterprises which are in cooperation with vocational institutions, as it not only helps enterprises accurately evaluate the trainees' progress but also

measures the efficiency of the OJT for better prospect performance. For the students and institutions, the evaluation results can be concluded from the individual revision obtained from the enterprise's evaluation based on the Kaufman model, and the results of the pre/post-test.

#### **4.13. Criteria for selecting partner vocational colleges**

Of the enterprises' respondents, 73% said that their companies have not appreciated students from local vocational colleges. The reasons are due to their shortage of essential skills and knowledge to catch up with daily updated industrial technologies. Most provincial vocational colleges have been using out-of-date machinery and equipment to train their students because the renewal and upgrade of facilities require a quite large source of expense to get approved by authorities, and otherwise, they remained at status quo (Interview with respondent AE7, 4/1/21). Meanwhile, at the companies, technologies, machinery, and equipment have changed periodically even on a monthly basis.

So, the selection of partner colleges for OJT implementation was made according to the following criteria: colleges equipped with modern facilities and qualified educators, training curriculum at the college that is compatible with the company's manufacturing fields, and reasonable expenses paid to the interns (Interview with respondent AE11, 13/1/21).

Duong (2019) argues in his article that most FDI firms in Vietnam have quite strict recruitment criteria such as foreign language proficiency, working ability in professional environments, knowledgeability, and workmanship. So, most enterprises have often been looking for "available" candidates rather than training from beginning.

It is apparent there are two types of business cooperation existing in the Vietnamese VET system. The former is that the enterprises invest in vocational institutes by OJT to hire cheap, short-term workers through OJT by which the OJT quality has not been appreciated or focused on, and the latter is that the enterprises look for well-qualified trainees to meet some specific segments in the production line by which no training course has been provided.

Until now, the importance of OJT pre-tests has become clearer. Through the test, enterprises can choose qualified interns who are able to meet the requirements of OJT and work. This test is also a barrier that each student must use best effort to overcome in order to prove their ability.

#### **4.14. Summary**

As mentioned in the literature review, there have been many Vietnamese researchers who have discussed and suggested solutions to optimize the current VET system. Vo (2019) suggests a mutual responsibility of colleges and enterprises in setting up training curriculum. Tran (2006), Nguyen (2009), Nguyen (2013), and Phan (2017) suggest the solutions of managing college-enterprise cooperation, including raising the perception of community on the importance of job-oriented training, upgrading the targets and program content of the training cooperation, developing human capital and facilities, and managing in-school and in-company training. Mori et. al. (2009) state the importance of business association in vocational training and suggest solutions to improve this cooperation.

However, different from other studies, this research targeted the most significant factor in the structure of a Dual VET system that is OJT. OJT illustrates how well the college-

enterprise cooperation maintained and developed. A good OJT program also means an effective Dual VET model.

## **CHAPTER V. CONCLUSION**

### **5.1. Introduction**

This chapter presents the conclusions in line with the research questions. First, it summarizes the main findings of the research inferred from the previous chapter through a comparison of the primary data in light of the initial hypotheses and arguments of the researcher to answer the research questions. The triangulation of three respects of perspectives of three kinds of sampled respondents is made to reach the final conclusion. Then further recommendations related to implementation policies are given. The chapter also outlines some key limitations and directions for future research.

### **5.2. Major findings**

The increase in the number of vocational institutions in Vietnam is not proportional to improvement in the quality of vocational trainees. Vocational institutions have increasingly focused on building and developing relationships with businesses, but this is not sufficient. The purposes of this study are to investigate the satisfaction level of vocational learners with the existing Dual VET programs in Vietnam, to identify the most important component in developing the Dual VET system and to determine the factors affecting the effectiveness of Dual VET in Vietnam. The findings have answered the two research questions by measuring assessments of individuals and organizations relevant to VET on the importance of high-quality OJT programs.



### **5.2.1. Most sampled vocational students did not have positive feedback toward the OJT programs they have undergone**

This hereto is the first hypothesis of this study. The survey data revealed that most vocational students were underwhelmed at the effectiveness of OJT. This means that the hypothesis is verified.

The majority of vocational students in this study said that OJT was not as effective as expected. During OJT, they were not given chances to upgrade their practical skills and understanding about the production technologies of enterprises. Specialized knowledge equipped in the colleges was not used in the OJT and there was a difference between the colleges' equipment and the enterprises'.

### **5.2.2. Response to research question 1, “To what extent does the number of affiliate enterprises affect the effectiveness of Dual VET in Vietnamese vocational colleges?”: The more partner enterprises, the better the quality of OJT**

As shown in the data analysis of section 4.8, the researcher concluded that the number of enterprises affiliated with the sampled vocational colleges under this study is still small. The fact that there are too few partner enterprises will make the colleges face certain difficulties and challenges as follows:

- (i) Some college's faculties do not even have a partner enterprise, making it difficult for them to send their students for OJT, which leads to inequality in the theory – practice distribution among students of the college.

- (ii) The choice of partner enterprises to perform OJT might be limited. Based on the school year's curriculum provided by the DVET and actual learning and training progress, the college will decide when its students are sent to enterprises for OJT. Due to the lack of partner enterprises, the college may face limitations in selecting enterprises with a high degree of compatibility in the field of production, OJT training content, working mechanisms and environment, etc. Therefore, it is the case that students become involved in OJT in the wrong direction, work non-professional jobs, or are not trained at the company at all, like other low-level workers.

The vocational educators also expressed concern that the lack of associated enterprises may not lead to sustainable development for the vocational college in coming years. The reasons there are still few enterprises interested in cooperating with vocational institutions and investing in human resources right from the beginning were pointed out in section 4.13, stating that the enterprises have not appreciated qualifications and hands-on skills of students from nationwide vocational colleges.

The reason enterprises do not appreciate vocational students is due to the differences between the in-school and OJT training content, and between the college's and enterprise's machines and equipment for practice. If these discrepancies could be removed, not only could vocational colleges train good human resources to supply the labor market, but enterprises could also have skilled workers who meet their requirements.

**5.2.3. Response to research question 2, “How effective is on-the-job training (OJT) of the Dual VET system toward enhancing the qualification of Vietnamese workers?”: A high-quality OJT program is a key factor in facilitating the sustainable development of the Dual VET system in Vietnam**

**5.2.3.1. Not enough duration of OJT**

Most vocational students reported that they have often participated in one or two OJT sessions in a year, and each OJT session lasted 1 – 3 months. Additionally, according to educators and enterprises’ staff, the time distributed for learning at the colleges is from 7 – 8 months, and the 2 – 3 remaining months are for OJT at the companies, and OJT is organized for each faculty in a year. After comparing three perspectives, the researcher concluded that OJT is held once a year in a period of 2 – 3 months for at least each faculty of the six sampled colleges of the study. Not to mention, some faculties of some colleges have no OJT implemented in a year. All the while, the total study time for 1 year at all nationwide vocational colleges is 10 months (TVET VietnamNews, 2017). It can be concluded that there is significant difference between the theory and practice time distributed in a year in most of the research sites under this study. The duration for OJT is too limited.

According to all the research respondents, there is a lot of work to be done in OJT, including learning the company’s rules and regulations, working safety laws, working styles, and doing assigned tasks. Three months seems to be insufficient to achieve truly effective OJT in which every student has the chance to formulate their own ideas related to the training content as well as to get comprehensive training. The data showed that 3-month OJT was not as effective as expected. Interns need more time to learn details about the optimal operation

of machinery and production processes. In addition, they need time to upgrade their skills and other advanced knowledge required for their specialization. Furthermore, during unexpected incidents occurring in the OJT process, the interns can learn to deal with the situation on their own before asking for help.

One of the arguments of this study is that each OJT should last more than 3 months in duration. A longer condensed period should be enough to achieve the highest efficiency, that is the most beneficial for both the colleges and enterprises.

In the Dual VET system in Germany, the participants learn the theoretical knowledge of their occupation of choice at schools and practical skills at companies on an alternate basis for 1 week or 1 month (Hockenos, 2018). Under the German Dual system, an apprentice often spends 60% of their time in the workplace and just 40% in the classroom, but the time distributed for theory and practice is interwoven in 1 week or 1 month.

#### **5.2.3.2. Lack of evaluation criteria and methods for OJT**

No study exists that mentions an assessment test of the quality of trainees before and after their internships or OJT.

A small number of interviewees from enterprises believe that pre- and post-tests are important for organizing each OJT program. Under such a program, the tests are composed of questions related to occupational knowledge, attitudes, and skills of the interns relying on the real machinery and equipment of the enterprises. Additionally, in accordance with in-progress curricular programs at colleges, interns are assessed for their progress in particular areas of professional skills.

The cooperation between vocational colleges and enterprises is a win-win situation, so colleges need to ensure they provide the company with qualified interns good enough to fulfill the OJT requirements, and vice versa, and companies need to return to the colleges better outcomes through serious training and accurate evaluation systems. From this interpretation, as mentioned in the initial arguments by the researcher, it could be concluded that pre- and post- tests of OJT are very important and significant for measuring an intern's progress after OJT.

On the other hand, for effective implementation of the progress tests before and after OJT, it is important to set up a system of evaluation criteria and methods with agreement from enterprises and colleges. According to the enterprise respondents, most companies have no evaluation criteria or method, and have one-sided or non-comprehensive evaluations in terms of knowledge and hands-on skills that solely. In order to conduct a comprehensive evaluation, the interns should be assessed in all three respects of OJT, including knowledge, hands-on skills, and attitudes/disciplines, like three sides of an isosceles triangle. Most enterprise respondents said that their companies have never used any methods to evaluate their interns' progress. A minority mentioned evaluation toolkits and regular meetings and reports of supervisors or mentors. In this study, the researcher suggests some effective evaluation methods for partner enterprises to use as follows:

- (i) Select appropriate evaluation techniques right from the beginning of OJT programs. The researcher recommends the modified Kaufman's Five Levels of Learning Evaluation be applied.
- (ii) Choose the right evaluation tools, including observations, tests, surveys, interviews, and reports/performance records.

### **5.2.3.3. Lack of qualified trainers**

Another point to answer the second research question suggested by many sampled respondents of the questionnaires is that the OJT trainers should be excellent in their qualifications and enthusiastic in giving instructions to the interns who are new to everything at the factories. According to UKEssays (2018), OJT is an investment of time and money, but it is also an investment into the most important asset of a company - that is, employees. In the Dual VET system, OJT is an investment in the potential employees of an enterprise. To build an effective OJT program, one of the most key factors is a qualified team of trainers, including managers, HR team members and experienced coworkers who provide internal training in the factories.

This is a new point regarding the initial arguments given by the researcher. Based on this suggestion raised by the majority of questionnaire respondents and based on other relevant respects, the researcher came to the conclusion that whether it is a manager, coworker/mentor, or designated training coordinator, companies should use the best people to conduct the OJT. The enterprises also may choose to outsource training or to use an in-house coordinator to work with them in handling the OJT. This can be helpful if the companies do not have the resources or knowledge to conduct successful OJT or in cases of highly-specialized systems or equipment. Not only competence in qualifications, but the trainers should also have close communication with the educators of the colleges in charge of supervising their students to exchange the situation of interns regarding specialized knowledge, hands-on skills, attitudes/disciplines, and progress. The intern's desire is comprehensively and deep consideration in training.

#### **5.2.3.4. Training content of OJT is incompatible with the majors of students**

Most questionnaire respondents gave negative feedback on the quality of the OJT they have experienced and suggested that students should participate in the right OJT programs. This means that the content to be trained in needs to fit with their specialized major at the colleges. As mentioned by one interview respondent, a streamlined design of training content/agendas for OJT should be based on mutual discussions and agreements between both colleges and partner enterprises in relation to students' majors, competence and motivations, and actual progress of training curriculum at the colleges.

To foster engineers with practical and creative abilities, most vocational colleges in Vietnam have given their students opportunities to experience and become accustomed to the actual sites where engineers and technicians solve complicated problems in the real world, rather than through theoretical learning alone. As part of these efforts, many vocational colleges have provided OJT programs as a compulsory subject for all students at least once a year or once in a whole 3-year course. The most significant feature of OJT is to provide students the opportunity to obtain practical business experience and acquire a clear sense of purpose in their education. In this regard, the researcher proposes a feasible design for an OJT program to be applied at nationwide vocational colleges as below:

- (i) Students of any industrial major must be included in OJT at a company whose production purpose corresponds to that industrial sector.
- (ii) Students in OJT should be like employees under training, and should be given the opportunity to extensively understand the production line, techniques, operation of machines and equipment, etc., through skill-specific tasks and

mentoring. Vital as it is, OJT should be dynamic and skill centered for students to effectively grasp the practical learning in the workplace.

- (iii) OJT should provide students the opportunity to utilize the theories, principles and ideas learned in the colleges under supervision at the actual sites in the most efficient way possible, and gaps in trainees' knowledge should be filled through live-work machines and practice.
- (iv) Specific tasks assigned to the interns should have the potential to develop the professional skills of the interns.
- (v) The interns have the opportunity to raise their voices related to the compatibility of the training content and assigned tasks as well as the chance to acquire extensive knowledge and skills in relation to their majors.

### **5.3. Policy recommendations**

Policy recommendations drawn from 5.1 are as follows: (i) the more partner enterprises there are, the better the quality of OJT; (ii) an OJT program should be longer than 3 months; (iii) it is essential to have specific criteria and methods for evaluating the trainees before and after OJT, such as the Kaufman's Five Levels model; (iv) OJT trainers should be excellent in their qualifications; (v) the training content of OJT must be compatible with the majors of students.

In addition, it was found that in order to set up and develop a successful Dual VET model especially effective OJT programs, it is essential to strengthen close coordination and support among three stakeholders: vocational institutions, enterprises, and the government at all levels. The government plays an important role in creating labor and labor use demand,



and making policies for vocational institutions to develop. This cooperation should be student-centered that regularly take account of students' minds, aspirations and needs relating to training activities. Accordingly, it is necessary for the DVET and the MoLISA to facilitate the college-enterprise cooperation through legal corridor and listen more carefully to the vocational students' needs to have more appropriate adjustments in training curricula, especially in the time distribution between in-school learning and in-company training and in the training content of OJT programs. If possible, the DVET should organize a number of large-scale Dual pilot models, with the participation of a large number of students and focusing on OJT.

#### **5.4. Methodological implications**

Mixed methods and triangulation are not new approaches in the research field, but what makes this study novel is the triangulation of all three perspectives from all direct VET stakeholders, including VET/OJT providers (vocational colleges and enterprises), and OJT users (vocational students).

By obtaining the opinions of all the VET/OJT-related entities mentioned above, the research is oriented following a concurrent design by directly comparing the quantitative results and qualitative findings obtained from the sampled respondents. This approach helps to thoroughly examine the credibility and validity of the research findings as much as possible.

## **5.5. Limitations and directions for future research**

The research instruments used in this research might contain some limitations. Firstly, the interview participants who are vocational educators and enterprise managers might have provided biased or insufficient answers with the purpose of hiding the negative sides of their organizations. Beyond this, some respondents were afraid lest their answers affect their personal interests in their own institutions or in their relationship with related partners. The convergent triangulation approach partly reduced these limitations to give the most accurate and convincing interpretation as possible for this study.

More research and innovation are needed to optimize Vietnamese vocational training systems toward sustainable development. A longitudinal study on the prospects of this research would be beneficial. Reforming OJT programs takes at least several years to determine their efficacy. Furthermore, while this study investigated the implementation of Dual VET and OJT through the perspectives of relevant objects, observation records are required to gain more insight into different patterns of OJT and college-enterprise cooperation, for instance, during college-enterprise dialog sessions, to determine whether the OJT content is highly relevant to the trainee's specialty.

## REFERENCES

- Abbott, M.L. (2017). *Using Statistics in the Social and Health Sciences with SPSS and Excel*. Hoboken, New Jersey: John Wiley & Sons, Inc.
- AHK (n.d.). *Dual Vocational Training. Delegation of German Industry and Commerce for Eastern Africa*. Retrieved from <https://www.kenia.ahk.de/vocational-training/Dual-vocational-training/>
- AHK (n.d.). *Best practice in Vietnam*. Retrieved from <https://vietnam.ahk.de/en/training-job/Dual-vocational-training>
- ADB (2014). *Technical and Vocational Education and Training in the Socialist Republic of Vietnam: An assessment*. ADB Philippines, pp. 52 – 55
- ADB (2020). *Vietnam: Technical and Vocational Education and Training Sector Assessment*. ADB Philippines
- Bhatnagar, M. (2012). *Kaufman's Model of Learning Evaluation*. Scribd.
- BIBB (n.d.). *VET in Germany: Occupations and Their Standards*. Retrieved from <https://www.bibb.de/govet/en/54899.php>
- Bliem, W. et. al. (2014). *Success Factors for the Dual VET System: Possibilities for Know-How-Transfer*. Ibw-Forschungsbericht Nr. 177, pp.17-19
- BMBF (n.d.) *The German Vocational Training System*. Retrieved from <https://www.bmbf.de/en/the-german-vocational-training-system-2129.html>
- Bodewig, C. et. al., (2013). *Skilling up Vietnam: Preparing the Workforce for a Modern Market Economy*. Vietnam Development Report 2014 – Main report , pp. 7 – 15
- Brookhart, S. M. & Durkin, D. T. (2003). *Classroom assessment, student motivation, and achievement in high school social studies classes*. *Applied Measurement in Education*, 16(1), pp. 27 - 54
- Bryman, A. (2016). *Social Research Methods*. Oxford University Press, pp. 635 – 645
- Bùi, V.H. (2015). *Đào tạo nguồn nhân lực trình độ trung cấp chuyên nghiệp theo định hướng gắn nhà trường với doanh nghiệp*. [Training Manpower at Professional Secondary Level towards Linking Schools with Enterprises]. *Journal of Science of HNUE*, vol. 60, No. 6, pp. 64 - 71
- Cao, V.S. (2011). *Giải pháp phát triển đào tạo nghề đáp ứng nhu cầu cạnh tranh của thị trường lao động trong bối cảnh hội nhập*. [Solutions to Develop Vocational Training to Meet the Competitive Needs of the Labor Market in the Context of Integration]. National Institute for Vocational Education and Training.
- CEDEFOP (2008). *Terminology of European Education and Training Policy*. CEDEFOP, Europe, p.14
- Creswell, J. W. & Plano Clark, V. L. (2006). *Designing and Conducting Mixed Methods Research*. Sage, p.62
- Creswell, J. W. (2018). *Research Design: Qualitative, Quantitative & Mixed Methods Approaches*. SAGE Publications, Inc.
- Das, K. (2018). *Labor Market Trends in Vietnam*. Vietnam Briefing. Accessed June 29, 2018. Retrieved from <https://www.vietnam-briefing.com/news/labor-market-trends-vietnam.html/>

- Dat, N. (2018). *Vietnamese Labor Productivity among Lowest in Asia despite Growth: Report*. Retrieved from <https://e.vnexpress.net/news/business/data-speaks/vietnamese-labor-productivity-among-lowest-in-asia-despite-growth-report>
- Deller, Jonathan (2020). *Kaufman's Model of Learning Evaluation: Key Concepts and Tutorials*. Kodo Survey.
- deMunck, V. C. & Sobo, E. J. (Eds) (1998). *Using Methods in the Field: a Practical Introduction and Casebook*. AltaMira Press.
- Downes, A. (2015). *Essentials of Learning Evaluation*. Watershed.
- Duong, D.D. (2019). *Thúc đẩy quan hệ giữa trường dạy nghề và doanh nghiệp trong bối cảnh hội nhập*. [Promoting Relationship between Vocational Institutions and Enterprises in the Integration Context]. Retrieved from <https://giaoduc.net.vn/giao-duc-24h/thuc-day-quan-he-giua-truong-day-nghe-va-doanh-nghiep-trong-boi-can-hoi-nhap> post202444.gd
- DVET (2018). *Vietnamese VET Background Paper – Reflection on Conference Topics*. MoLISA, pp. 46 - 64
- GSO (2017). *Social and Economic Situation in 2017*. Retrieved from [https://www.gso.gov.vn/default\\_en.aspx?tabid=622&ItemID=18670](https://www.gso.gov.vn/default_en.aspx?tabid=622&ItemID=18670)
- GSO (2014). *Report on Labor Force Survey Quarter 4, 2014*. Ministry of Planning and Investment.
- Hai, N. (2019). *Số lượng các cơ sở giáo dục nghề nghiệp thuộc doanh nghiệp còn ít*. [Number of Vocational Institutes under Control of Enterprises is Still Small]. Retrieved from <https://vietnamnet.vn/vn/giao-duc/tuyen-sinh/so-luong-cac-co-so-giao-duc-nghe-nghiep-thuoc-doanh-nghiep-con-it>
- Hayes, A. (2019). *Skilled Labor*. Retrieved from <https://www.investopedia.com/terms/s/skilled-labor.asp>
- Harrison et. al.. (2017). *Case study Research: Foundation and Methodological Orientations*. Volume 18, Art 19, Forum: Qualitative Social Research
- Harshit, T. (2012). *Evaluation of Training and Development: An analysis of various models*. IOSR Journal of Business and Management (IOSR-JBM) ISSN: 2278-487X., pp. 6 – 12 [www.iosrjournals.org](http://www.iosrjournals.org)
- Hoa, Q. (2018). *Thiếu hụt lao động tay nghề cao*. [Shortage of High-Skilled Labor]. Retrieved from <https://congthuong.vn/thieu-hut-lao-dong-tay-nghe-cao-113565.html>
- Hockenos, P. (2018). *How Germany's Vocational Education and Training system works*. Journalism for the energy transition. Accessed November 16, 2018. Retrieved from <https://www.cleanenergywire.org/factsheets/how-germanys-vocational-education-and-training-system-works>
- Holcim (2019). *Enterprise Vocational Education*. Retrieved from [www.holcim.com.vn](http://www.holcim.com.vn)
- Hong, A.T. (2009). *Doi Moi and the Remaking of Vietnam*. Global Asia.
- Huynh, V.S. (2016). *Kỹ năng thích ứng với môi trường công việc khi thực tập tốt nghiệp của sinh viên*. [Skills of Adapting to the Work Environment during Graduation Internship of Students]. Ministerial Research on Science and Technology, Ho Chi Minh Pedagogical University.
- iMOVE (2019). *Vietnamese-German Development Cooperation in Vocational Education and Training*. Retrieved from [tvet-vietnam.org](http://tvet-vietnam.org)
- Jack, J. P. & Patricia, P.P. (2016). *Handbook of Training Evaluation and Measurement Methods*. Routledge

- John, M. B. et. al. (1997). *Introduction to On-the-Job Training*. Upjohn Institute for Employment Research, pp. 1-3
- Kaufman, R. & Keller, J. (1994: Winter). *Levels of Evaluation: Beyond Kirkpatrick*. Human Resource Quarterly, 5(4).
- Kaufman, R., Keller, J. & Watskin, R. (1995). *What Works and What Doesn't: Evaluation beyond Kirkpatrick*. Performance and Instruction 35(2), pp. 8 – 12.
- Kendall, L. (2008). *The Conduct of Qualitative Interviews: Research Questions, Methodological Issues, and Researching Online*. Routledge Handbooks Online p.77
- Kumar et. al. (2018). *Embedding Assessment in Simulation Skills Training Program for Medical and Midwifery Students: A Pre- and Post-Intervention Evaluation*. Australian and New Zealand Journal of Obstetrics and Gynaecology, 58(1), 40 – 46.
- Kirkpatrick, D. L. (1994). *Evaluating Training Programs: the Four Levels*. San Francisco: Berrett-Koehler.
- Lai, E. R. & Waltman, K. (2008). *Test Preparation: Examining Teacher Perceptions and Practices*. Educational Measurement Issues and Practice. Retrieved from <https://doi.org/10.1111/j.1745-3992.2008.00120.x>
- Le, Q.H. & Tran, B.N. (2019). *Qualification Mismatch in the Labor Market and the Impact on Earnings: Evidence from Vietnam*. Emerald Insight. Retrieved from [www.emeraldinsight.com/1859-0020.htm](http://www.emeraldinsight.com/1859-0020.htm)
- Lilama2 (2018). *Bốn đơn vị ký kết biên bản ghi nhớ chương trình đổi mới đào tạo nghề tại Việt Nam*. [Four Parties Signed in MOU of the Vocational Training Reform Program in Vietnam]. Retrieved from <http://lilama2.edu.vn/home/hop-tac-quoc-te/Bon-don-vi-ky-ket-bien-ban-ghi-nho-chuong-trinh-do-1206.html>
- London, J.D. (2011). *Education in Vietnam*. Leiden University. Retrieved from [https://www.researchgate.net/publication/297968340\\_Education\\_in\\_Vietnam](https://www.researchgate.net/publication/297968340_Education_in_Vietnam)
- Mahuron, S. (2019). *Skilled labor vs. Unskilled labor*. Retrieved from <https://smallbusiness.chron.com/skilled-labor-vs-unskilled-labor-46154.html>
- Marshall, C. & Rossman, G. B. (1995). *Designing qualitative research*. Sage
- Matthias, P. & Kristina, W. (2020). *Does Dual Training Make the World Go Round? Training Models in German Companies in China, India and Mexico*. Springer Link, Vocation and Learning.
- McCull-Kennedy, J., & Schneider, U. (2000). *Measuring Customer Satisfaction: Why, What and How? Total Quality Management*, 11, pp. 883-889.
- Mercer et.al (2019). *The importance of Customer Feedback*. Mercer, p.116
- MOET: Ministry of Education and Training (2007). *Mid-decade assessment report on Education for all in Vietnam 2001 – 2007*. Hanoi Publishing House.
- MoHLW (2016). *The Japanese Dual System*. Labor Situation in Japan and Analysis, pp.32-33
- Mori, J. et. al., (2009). *Skill Development for Vietnam's Industrialization: Promotion of Technology Transfer by Partnership between Institutions and FDI Enterprises*. Hiroshima University.
- Morse, J. M. (1991). *Approaches to qualitative – quantitative methodological triangulation*. Nursing Research, 40(2), p.122
- Ngoc, Q. (2016). *Đào tạo hầu hết bằng lý thuyết, rất ít trường đại học dám cam kết chất lượng*. [Because of Theory-mostly Training, very Few Universities Dare to Commit Quality]. Retrieved from <https://giaoduc.net.vn/giao-duc-24h/dao-cao-hau-het-bang-ly-thuyet-rat-it-truong-dai-hoc-dam-cam-ket-chat-luong-post168611.gd>

- Nguyen, D.L. (2015). *Sự gắn kết giữa nhà trường và doanh nghiệp trong đào tạo nguồn nhân lực phục vụ phát triển kinh tế - xã hội ở Việt Nam: Thực trạng và khuyến nghị*. [The Cohesion between Schools and Enterprises in Human Resource Training for the Purpose of Socioeconomic Development in Vietnam: Real Situation and Recommendations]. *Phát triển & Hội nhập*, 22(32).
- Nguyen, J. (2019). *Vietnam 57<sup>th</sup> Globally in Total Workforce Index 2019*. Retrieved from <http://www.vneconomicstimes.com/article/society/vietnam-57th-globally-in-total-workforceindex2019#:~:text=In%20terms%20of%20skills%2C%20the,per%20cent%20compared%20to%202018>
- Nguyen, Q.V. et. al. (2017). *Báo cáo Giáo dục nghề nghiệp Việt Nam 2017*. [Vietnam Vocational Education and Training Report 2017]. Directorate of Vocational Education and Training, National Institute of Vocational Education and Training, pp. 86 – 88
- Nguyen, V.A. (2009). *Phối hợp đào tạo giữa cơ sở dạy nghề và doanh nghiệp trong khu công nghiệp*. [Training Cooperation between Vocational Institutions and Enterprises in the Industrial Park]. Doctoral dissertation in Education, Vietnam Institute of Science and Education
- Nguyen, V.T. (2013). *Phối hợp dạy học thực hành nghề giữa các trường dạy nghề với các cơ sở sử dụng lao động*. [Association on Vocational Practical Training between Vocational Schools and the Employers]. Doctoral dissertation in Educational Science, Thai Nguyen University.
- Nhan, D. (2018). *Preparing High Quality Human Resources to Meet the 4.0 “Playing Field”*. Vietnam Breaking News. Accessed May 19, 2018. Retrieved from <https://www.vietnambreakingnews.com/2018/05/preparing-high-quality-human-resources-to-meet-the-4-0-playing-field/>
- Oscar, V. (2017). *Challenges to the Implementation of Dual Apprenticeships in OECD countries: A Literature Review*. Vocational Education and Training in Times of Economic Crisis, pp. 41-57
- Peter, F. (2012). *Measuring Student Satisfaction from the Student Outcomes Survey*. National Centre for Vocational Education Research.
- Pham, X.T. et. al., (2017). *Chuẩn hóa Giáo dục nghề nghiệp theo yêu cầu hội nhập*. [Standardizing Vocational Education according to Integration Requirements]. National Institute for Vocational Education and Training.
- Phan, T.P.L. (2017). *Quản lý liên kết đào tạo cao đẳng nghề đáp ứng nhu cầu nhân lực của các khu công nghiệp tại tỉnh Bình Dương*. [Training Association Management at Vocational Colleges to Meet with Human Resources Demand at the Industrial Parks of Binh Duong Province]. Doctoral dissertation in Educational Science, Ministry of Education and Training, Vietnam Institute of Science and Education.
- PILAC (2016). *Project on Improvement of Local Administration in Cambodia: Manual on Training Evaluation*. Ministry of Interior and JICA.
- Schmuk, R. (1997). *Practical action research for change*. Arlington Heights, IL: IRI/Skylight Training and Publishing.
- Shira, D. et. al. (2015). *Foreign Companies report labor and skills shortage in Vietnam*. Asia Briefing
- Spradley, J. P. (1979). *The Ethnographic Interview*. Waveland Press

- Thomas, J. (2019). *Vietnam: ASEAN's Best Country to Invest in*. The Asean Post. Accessed October 11, 2019. Retrieved from <https://theaseanpost.com/article/vietnam-aseans-best-country-invest>
- Tibken, Shara (2015). *Schooling Vietnam: How Tech Companies are Training the Next Wave of Workers*. Retrieved from <https://www.cnet.com/news/schooling-vietnam-how-tech-companies-are-training-the-next-wave-of-workers/>
- Torres, R. T., et. al. (2005). *Evaluation Strategies for Communicating and Reporting*. Sage Publications.
- Tran, K.H. (2006). *Kết hợp đào tạo tại trường và doanh nghiệp nhằm nâng cao chất lượng đào tạo nghề ở Việt Nam trong giai đoạn hiện nay*. [Training Cooperation at Schools and Enterprises to Improve Vocational Training Quality in Vietnam in Today's Time]. Doctoral dissertation in Educational Management, Hanoi National University.
- Trinh, N.T. (2003). *Hoàn thiện mô hình quản lý đào tạo nguồn nhân lực chất lượng cao trong các trường đại học Việt Nam*. [Completing the Model of High-Quality Human Resources Management in Vietnamese Universities]. Doctoral dissertation in Educational Management, Hanoi National University.
- Trines, S. (2017). *Education in Vietnam*. WENR. Retrieved from <https://wenr.wes.org/2017/11/education-in-vietnam>
- TVET Vietnam News (2017). Retrieved from <https://www.tvet-vietnam.org/en/topic/39.tvet-in-vietnam.html>
- UKEssays (2018). *Types and importance of on the job training*. Retrieved from <https://www.ukessays.com/essays/management/types-and-importance-of-on-the-job-training-management-essay.php?vref=1>
- UNESCO – General Conference (2015). *Technical and vocational education and training (TVET)*. Retrieved from <https://unevoc.unesco.org/go.php?q=TVET+Glossary+A-Z&term=Technical+and+vocational+education+and+training>
- VCTH (n.d.). *Hợp tác đào tạo nghề kép - tiêu chuẩn Cộng hòa Liên bang Đức, hướng đi mới cho đào tạo nghề*. [Dual VET – Standards of Germany, New Direction for Vocational Training]. Retrieved from <http://vca.org.vn/hop-tac-dao-cao-nghe-kep-tieu-chuan-cong-hoa-lien-bang-duc-huong-di-moi-cho-dao-cao-nghe-a20331.html>
- VNS (2020). *Vietnam ranks 96th in global talent competitiveness index*. Retrieved from <https://vietnamnews.vn/economy/653667/viet-nam-ranks-96th-in-global-talent-competitiveness-index.html>
- VNS (2019). *Vietnam's labor productivity needs to catch up with ASEAN*. Retrieved from <https://vietnamnews.vn/economy/534756/viet-nams-labor-productivity-needs-to-catch-up-with-asean.html>
- Vo, X.T. (2019a). *Dual or Complementary in Vocational Training: which Concept would be Suitable for TVET Vietnam?* University of Technology and Education in Ho Chi Minh City.
- Vo, X.T. (2019b). *Vì sao doanh nghiệp miễn cưỡng nhận sinh viên thực tập?* [Why are Enterprises Reluctant to Accept Students for Internship?]. Retrieved from <https://thanhnien.vn/giao-duc/vi-sao-doanh-nghiep-mien-cuong-nhan-sinh-vien-thuc-tap-1139155.html>
- Vu, X.H. et. al., (2017). *Đổi mới quản lý nhà nước về giáo dục nghề nghiệp theo định hướng thị trường lao động và hội nhập quốc tế*. [Reforming State Management of Vocational

- Education in the Direction of Labor Market and International Integration]. National Institute for Vocational Education and Training.
- Vu, X.H. et. al., (2018). *Xây dựng cơ chế điều phối hoạt động giữa các đối tác có liên quan trong giáo dục nghề nghiệp*. [Develop a Mechanism for Coordinating Activities among Relevant Partners in Vocational Education]. National Institute for Vocational Education and Training.
- Wolter, S. & Ryan, P. (2011). *Apprenticeship*. Handbook of the Economics of Education, pp. 535 - 546



## APPENDICES

### APPENDIX A – QUESTIONNAIRE FOR VOCATIONAL STUDENTS

Khảo sát này nhằm mục đích thu thập ý kiến, quan điểm và thái độ cá nhân về hiệu quả của chương trình đào tạo nghề kép đã và đang được triển khai tại nhiều trường cao đẳng nghề trên toàn quốc, để phục vụ cho đề tài luận văn Thạc sĩ tại trường Đại học Châu Á Thái Bình Dương Ritsumeikan về “Các yếu tố ảnh hưởng đến hiệu quả của chương trình Đào tạo nghề kép tại Việt Nam dưới góc nhìn về liên kết doanh nghiệp”. Người tham gia khảo sát là sinh viên đang theo học các trường cao đẳng nghề tại Việt Nam và từ đủ 18 tuổi trở lên.

*This questionnaire is for collecting personal ideas, points of view, and attitudes about the quality of Dual VET that has been being implemented in many vocational colleges nationwide, to contribute to the master’s thesis at Ritsumeikan Asia Pacific University titled “Main factors affecting the effectiveness of the Dual Vocational Education and Training system in Vietnam in terms of business association”. The survey participants are students from 18 years old attending vocational colleges in Vietnam.*

Trong cuộc khảo sát này, không có quan điểm, thái độ nào là đúng hay sai mà tất cả đều hữu ích cho nghiên cứu của tôi. Bảng khảo sát gồm 26 câu hỏi với thời gian tối đa để hoàn thành là 10 - 15 phút. Tôi cam kết rằng mọi thông tin do người tham gia khảo sát cung cấp trong bảng câu hỏi này đều chỉ được sử dụng cho mục đích phân tích dữ liệu nghiên cứu của tôi.

*In this survey, there are no wrong or right viewpoints and attitudes, and all information is useful for my research. The questionnaire includes 26 questions with a maximum of 10 – 15 minutes to be completed. All information provided by the participants in this questionnaire will only be used for the purpose of the thesis’s data analysis.*

Bảng khảo sát gồm 2 phần:

Phần I: Thông tin chung

Phần II: Chương trình học tại trường và Thực tập doanh nghiệp

*The survey consists of two parts:*

*Part I: General information*

*Part II: Curriculum at colleges and on-the-job training at companies*

Rất mong nhận được sự hợp tác chân tình nhất của các bạn.

Xin chân thành cảm ơn!

*Looking forward to your faithful cooperation.*

*Sincerely thanks!*

PHẦN I. THÔNG TIN CHUNG  
PART 1. GENERAL INFORMATION

1. Vui lòng cho biết tên trường bạn đang theo học: .....  
*Please provide the name of your college:*
  
2. Bạn là sinh viên:     Năm nhất *1st year*     Năm hai *2nd year*     Năm ba *3rd year*  
*You are a student at:*
  
3. Giới tính của bạn là?     Nam *Male*     Nữ *Female*     Khác *Other*  
*What is your gender?*
4. Tuổi của bạn là?     18 – 20     20 – 22     Từ 22 trở lên *22 and above*  
*What is your age?*
  
5. Bạn đang theo học ngành gì tại trường? .....  
*What is your major?*
  
6. Trình độ ngoại ngữ hiện tại của bạn? *Level of your foreign language?*  
 Tiếng Anh: không có kiến thức nền *English: No background*  
 Tiếng Anh: sơ cấp *English: Elementary*  
 Tiếng Anh: trung cấp *English: Intermediate*  
 Tiếng Anh: cao cấp *English: Advanced*  
 Ngoại ngữ khác *Other languages*
  
7. Trình độ tin học hiện tại của bạn? *Level of your computer skill?*  
 Không có kiến thức nền *No background*  
 Sơ cấp *Elementary*  
 Trung cấp *Intermediate*  
 Cao cấp *Advanced*
  
8. Dự định của bạn sau khi tốt nghiệp cao đẳng nghề? *Your intention after graduation*  
 Tiếp tục học Đại học *Continue to university*  
 Đi làm tại các doanh nghiệp ngoài quốc doanh *Working for FDI companies*  
 Xin việc trong các cơ quan nhà nước *Working for state agencies*  
 Tự mở doanh nghiệp/ cửa hàng kinh doanh riêng *Opening own business/store*  
 Chưa xác định *Undefined*  
 Dự định khác *Other intention*

PHẦN II. CHƯƠNG TRÌNH HỌC TẠI TRƯỜNG VÀ THỰC TẬP DOANH NGHIỆP  
 PART II. CURRICULUM AT COLLEGES AND ON-THE-JOB TRAINING AT COMPANIES

9. Bạn nhận xét gì về cơ sở vật chất và trang thiết bị của cơ sở đào tạo?  
*What do you think about the facilities and equipment at your college?*

ID	Statement	Không đạt yêu cầu <i>Unsatisfactory</i>	Bình thường <i>Neutral</i>	Tốt <i>Good</i>	Rất tốt <i>Very good</i>
FE1	Phòng học lý thuyết <i>Classrooms</i>				
FE2	Xưởng thực hành <i>Workshops</i>				
FE3	Máy móc, thiết bị thực hành <i>Machinery and equipment for practice</i>				
FE4	Các phương tiện, đồ dùng dạy học <i>Learning materials and tools</i>				
FE5	Thư viện <i>Library</i>				
FE6	Sách, giáo trình, tài liệu học tập <i>Books, textbooks, and reference materials</i>				
FE7	Nhà thi đấu, sân bãi thể dục - thể thao <i>Gymnasium, and sport courses</i>				

10. Trong một năm học, tổng thời gian bạn học kiến thức tại trường là:  
*Total time of theoretical learning at college:*

- 1 – 3 tháng / months                       7 – 9 tháng / months  
 4 – 6 tháng / months                       Cả năm Whole year

11. Nội dung kiến thức bạn học ở trường là gì? (có thể chọn nhiều đáp án)  
*What content of knowledge do you learn in college? (Multiple choice is allowed)*

- Lý thuyết môn chung *General subjects*  
 Lý thuyết chuyên ngành *Specialized subjects*  
 Thực hành tại xưởng *Practice in workshops*  
 Ngoại ngữ *Foreign language*  
 Kỹ năng mềm (kỹ năng xử lý công việc, giao tiếp ứng xử,...) *Soft skills*  
 Kiến thức/kỹ năng khác *Other knowledge/skills*

12. Tại cơ sở đào tạo bạn đang theo học, hoạt động liên kết với doanh nghiệp được thể hiện qua những mức độ nào sau đây? *At your college, to what extent are business association activities demonstrated?*

ID		Chưa có <i>Never</i>	Đôi khi <i>Rarely</i>	Thường xuyên <i>Often</i>	Rất thường xuyên <i>Very often</i>
BAA1	Công bố danh sách các doanh nghiệp đang liên kết với nhà trường <i>Publishing a list of partner businesses with the college</i>				
BAA2	Cung cấp thông tin về nhu cầu tuyển dụng của các doanh nghiệp <i>Providing information about the recruitment needs of enterprises</i>				
BAA3	Tổ chức hội nghị giao lưu giữa nhà trường và doanh nghiệp <i>Organizing exchange conferences between the college and enterprises</i>				
BAA4	Cán bộ doanh nghiệp tham gia giảng dạy và hướng dẫn thực hành tại trường <i>Enterprise staff participate in teaching and practice guidance at the college</i>				
BAA5	Tổ chức tham quan thực tế tại doanh nghiệp <i>Organizing actual visits to companies</i>				
BAA6	Sinh viên được đi thực tập nghề tại doanh nghiệp <i>Students take part in on-the-job training at enterprises</i>				

13. Bạn đi thực tập doanh nghiệp bao nhiêu lần trong một năm học?

*How many times have you taken part in OJT?*

- 1 – 3 lần / *times*     4 – 6 lần / *times*     Nhiều hơn 6 lần *More than six*

*times*

14. Khoảng nghỉ giữa các đợt thực tập là bao lâu?

*How long is the break between the OJT times?*

- 1 – 2 tháng / *months*     3 – 4 tháng / *months*  
 5 – 6 tháng / *months*     Nhiều hơn 6 tháng *More than 6 months*

15. Trung bình mỗi đợt thực tập kéo dài bao lâu? *How long is each internship on average?*

- 1 – 3 tháng / *months*     7 – 9 tháng / *months*  
 4 – 6 tháng / *months*     Nhiều hơn 9 tháng *More than 9 months*

16. Những công ty bạn đã đến thực tập thuộc lĩnh vực sản xuất/kinh doanh nào? *Which*



		<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly agree</i>
OE1	Sinh viên được cán bộ doanh nghiệp phổ biến kế hoạch, nội dung thực tập, nội quy quy định của doanh nghiệp <i>Students are informed of the OJT plan, content, and regulations of the enterprise by its staff</i>					
OE2	Doanh nghiệp cử cán bộ hướng dẫn sinh viên trong quá trình thực tập <i>Enterprises assign staff to guide students during the internship</i>					
OE3	Nhà trường cử Giáo viên giám sát thực tập <i>Your college assigns teachers to supervise your internship</i>					
OE4	Sinh viên được thực tập theo đúng kế hoạch <i>Students are involved in OJT as planned</i>					
OE5	Doanh nghiệp tổ chức các cuộc họp đánh giá/rút kinh nghiệm trong quá trình thực tập <i>Enterprises hold meetings to evaluate/learn from experience during OJT</i>					
OE6	Nội dung thực tập nghề liên quan đến chuyên ngành học của bạn <i>Content of OJT programs is related to your major</i>					
OE7	Sinh viên được tạo điều kiện nâng cao tay nghề, tìm hiểu về công nghệ sản xuất của doanh nghiệp <i>Students are given the chance to upgrade their practical skills, and understand the production technologies of enterprises</i>					

OE8	Lý thuyết chuyên môn học tại trường được vận dụng trong quá trình thực tập <i>Specialized knowledge learned at your college is manipulated in the OJT process</i>					
OE9	Kỹ năng thực hành học tại trường được áp dụng trong quá trình thực tập <i>Practical skills learned at your college are manipulated in OJT process</i>					
OE10	Kiến thức và kỹ năng thực hành học tại trường khác so với khi đi thực tập <i>Knowledge and practical skills learned at your college are different from OJT</i>					
OE11	Máy móc, thiết bị sản xuất tại doanh nghiệp khác so với trang thiết bị của trường <i>Machines and equipment of enterprises are different from your college's.</i>					
OE12	Sinh viên được hưởng chế độ đãi ngộ và có cơ hội làm việc tại doanh nghiệp sau khi tốt nghiệp <i>Students are entitled to remuneration and have the opportunity to work at the enterprise after graduation</i>					
OE13	Sinh viên được tôn trọng bởi các cán bộ và người lao động của doanh nghiệp <i>Students are respected by enterprise's employees</i>					
OE14	Sinh viên được bày tỏ ý kiến, nguyện vọng cá nhân liên quan đến nội dung thực tập nghề <i>Students can freely express personal ideas and desires related to OJT's contents</i>					
OE15	Kiến thức thu được sau khi đi thực tập là hữu ích với bạn					

	<i>Knowledge acquired from OJT is useful for you</i>					
OE16	Bạn cảm thấy tự tin hơn về chuyên môn sau khi kết thúc thực tập <i>You feel more confident on your expertise after finish of OJT</i>					
OE17	Bạn muốn nhà trường tiếp tục tổ chức các đợt thực tập khác trong thời gian tới <i>You desire your college to continue organizing other OJT in coming time</i>					
OE18	Bạn hài lòng với kiến thức/kỹ năng được đào tạo trong quá trình thực tập <i>You are satisfied with knowledge/skills trained in during OJT</i>					
OE19	Các đợt thực tập nghề đạt hiệu quả như bạn kỳ vọng <i>The OJT sessions were as effective as you expected</i>					

22. Kiến thức và kỹ năng nào của bạn được cải thiện sau khi đi thực tập? (có thể chọn nhiều đáp án)

*What knowledge and skills were improved after OJT? (Multiple choice is allowed)*

- Kiến thức liên quan đến chuyên ngành *Specialized knowledge*
- Thao tác vận hành máy móc/thiết bị *Operation of machinery/equipment*
- Ngoại ngữ *Foreign language*
- Kỹ năng mềm (tác phong làm việc, giao tiếp ứng xử,...) *Soft skills*
- Các kỹ năng khác *Other skills*

23. Bạn có được yêu cầu làm bài kiểm tra đánh giá sau khi kết thúc đợt thực tập không?  
*Were you asked to do an evaluation test at the end of OJT?*

- Có *Yes*                       Không *No*

24. Nếu "Có", nội dung kiểm tra là gì? (có thể chọn nhiều đáp án) *If "Yes", what was the content of the entry tests? (Multiple choice is allowed)*

- Kiến thức liên quan đến chuyên ngành *Specialized knowledge*
- Thao tác vận hành máy móc/thiết bị *Operation of machinery/equipment*
- Ngoại ngữ *Foreign language*
- Kỹ năng mềm (tác phong làm việc, giao tiếp ứng xử,...) *Soft skills*



□ Các kỹ năng khác *Other skills*

25. Theo bạn, những yếu tố nào góp phần tạo nên hiệu quả của hoạt động thực tập nghề tại doanh nghiệp? *In your opinion, what factors contribute to the effectiveness of an OJT program?*
26. Vui lòng chia sẻ ý kiến của bạn để giúp cải thiện chất lượng của hoạt động thực tập doanh nghiệp. *Please share your ideas to help improve the quality of OJT.*

Xin chân thành cảm ơn những đóng góp của bạn cho nghiên cứu này!  
*Sincerely thanks for your cooperation in this study!*

## APPENDIX B – INTERVIEW QUESTIONS FOR VOCATIONAL EDUCATORS

No.	Original language	English translation
1	<p>Tại trường anh/chị, thời gian dành cho thực tập doanh nghiệp trong một năm học là bao nhiêu tháng? Học lý thuyết tại trường là bao nhiêu tháng?</p> <p><u>Câu hỏi thăm dò:</u> Anh/Chị cho rằng phân bổ thời gian như vậy có hợp lý không?</p>	<p><i>How many months in a year are spent on OJT?</i></p> <p><i>Probes: According to you, is this time distribution reasonable?</i></p>
2	<p>Có bao nhiêu doanh nghiệp hiện đang hợp tác / liên kết đào tạo với nhà trường?</p> <p><u>Câu hỏi thăm dò:</u> Vui lòng cho biết tên của các doanh nghiệp đối tác và lĩnh vực kinh doanh/ sản xuất của các doanh nghiệp đó? Mỗi quan hệ hợp tác đã kéo dài được bao lâu?</p>	<p><i>How many enterprises are in partnership with your college?</i></p> <p><i>Probes: Please specify the names of the partner companies and their fields of trade/production? How long has the partnership lasted?</i></p>
3	<p>Nhà trường có chủ động trong việc tham gia các hội chợ việc làm hoặc các sự kiện kết nối doanh nghiệp không?</p> <p><u>Câu hỏi thăm dò:</u> Trong các hoạt động đó, nhà trường có chủ động kết nối với doanh nghiệp và mời hợp tác đào tạo nghề cho sinh viên của mình hay không?</p>	<p><i>Has your college been active in participating in job fairs or business connection events inside and outside of the province?</i></p> <p><i>Probes: In these activities, has your college connected with enterprises and invited them to cooperate in training for active positions?</i></p>
4	<p>Nhà trường có công bố cho sinh viên biết về danh sách các doanh nghiệp liên kết, công nghệ mới hay thông tin tuyển dụng không?</p>	<p><i>Has your college published news including lists of partner enterprises, new technologies, or recruitment notices, in local media for student awareness?</i></p>
4	<p>Nhà trường đã từng chủ động mời doanh nghiệp tới tham quan trường chưa?</p>	<p><i>Has your college ever invited enterprises to visit?</i></p>
5	<p>Nhà trường đã bao giờ tổ chức các hội thảo hoặc cuộc thi tay nghề sinh viên có sự tham gia của doanh nghiệp hay chưa?</p>	<p><i>Has your college ever organized workshops/contests for hands-on skills for students with the participation of enterprises?</i></p>
6	<p>Nhà trường hay doanh nghiệp chịu trách nhiệm xây dựng nội dung chương trình thực tập?</p>	<p><i>Which college or enterprise would be in charge of setting up the training content of OJT?</i></p>
7	<p>Nội dung đào tạo của chương trình thực tập là gì?</p>	<p><i>What is the main content of training in OJT?</i></p>

**APPENDIX C – INTERVIEW QUESTIONS FOR  
EMPLOYERS/MANAGERS OF ENTERPRISES**

<b>No.</b>	<b>Original language</b>	<b>English translation</b>
1	Công ty đã từng tổ chức các bài kiểm tra đầu vào và đầu ra để đánh giá sự tiến bộ của thực tập sinh trong các đợt thực tập hay chưa?	<i>Has your company ever organized any pre- or post- tests of OJT to measure students' qualifications?</i>
2	Thời gian cho mỗi đợt thực tập thường là bao lâu?	<i>How long has been spent on each OJT session?</i>
3	Nội dung đào tạo của chương trình thực tập là gì?	<i>What is the main content of training in OJT?</i>
4	Những tiêu chí và phương pháp nào được dùng để đánh giá sự tiến bộ của thực tập sinh?	<i>What criteria and methods have been used to evaluate the interns' progress?</i>
5	Những tiêu chí để lựa chọn trường đối tác là gì?	<i>What are the criteria to select partner vocational colleges?</i>

## APPENDIX D – CODE BOOK

Question	Answer	Code/ Label
<b>Questionnaires</b>		
Q9 – FE (Facilities & Equipment of the College)	Unsatisfactory	1
	Neutral	2
	Good	3
	Very good	4
Q12 – BAA (Business Association Activities)	Never	1
	Rarely	2
	Often	3
	Very often	4
Q21 – OE (OJT Evaluation)	Strongly disagree	1
	Disagree	2
	Neutral	3
	Agree	4
	Strongly agree	5
Q26 – Recommendations on improving OJT	Professionalism	p
	Quality	q
	Experience	e
	Management of enterprise	m
	Responsibility	r
	Discipline	d
	Knowledge	k
	Equal distribution between theory and practice	t&p
	Hard working	h
	Regulations	rg
	Smartness	s
	Health	hl
	College-enterprise cooperation	co
	Good OJT content (correlation between theory and practice/theory acquired at college can be utilized in OJT)	OJT
	Practical skills/Working style	pr
	Communication skills	cm
	Good environment	ev
	Consciousness	cs
	Patience	pt
	Teamwork	tw
Human power	hm	
Salary	sl	

Q26 – Recommendations on improving OJT	Attitude	at
	Soft skills	sk
	Good compatible companies	cp
	Expertise	exp
	Working time	wt
	Right majors	rm
	Motivation	mo
	Relationship between company staffs and interns	rs
	Safety	sa
	Good machinery at both colleges and enterprises; machinery should be similar	mc
	Workshops at colleges related to OJT	ws
	Students can choose enterprise to be in OJT	cho
	Enterprises should be introduced in advance	intro
	Qualified and enthusiastic trainers/teachers; cooperation between teachers and enterprise's trainers	tn
	Renew list of companies	rn
	Update new technologies/processes of enterprise	up
N/A	n/a	
Unclear answer	ua	
<b>Interviews with educators</b>		
Association activities	Participate in job affairs and business connection events	ja
	Actively connecting and inviting enterprises in cooperation	ci
	Enterprises actively invite cooperation	ec
	Publishing news related to partner enterprises, technologies, and recruitment notices	pn
	Inviting enterprises to visit college	ie
	Actively expanding list of partners	el
	Organizing OJT	OJT
	Organizing workshops/ contests on hands-on skills with the participation of enterprises	wc