CHAPTER

7

The Translative Adaptation Process in a Local Skills Development Initiative: The Case of Dong Nai Manufacturing Human Resources Development Project

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1. Introduction

This chapter examines the relationship between development cooperation implemented in a 'hands-on' approach and translative adaptation. It is based on the case of a skills development project which was led by local governments, technical and vocational education and training (TVET) institutions, and other Vietnamese and Japanese stakeholders.

It is said that Japan's international development cooperation has contributed to economic development in a way that suits the situation of each country through policy learning and the translative adaptation of foreign models based on an analysis of the characteristics of each country's economy, society, and systems (Ohno 1998, 12). In addition, this type of development cooperation is associated with a hands-on approach, which respects the historical and cultural backgrounds of the partner country, flexibly determines the goals and processes to achieve them, and encourages initiatives developed by the recipient countries of Official Development Assistance (ODA) (see Chapter 2).

However, there are few studies on how development cooperation projects in a hands-on approach can promote translative adaptation, in particular in skills development projects that have to deal with diverse regional skills needs even in a single country (Mori and Stroud 2021). Therefore, this chapter attempts to analyze key elements of the hands-on approach that may prompt translative adaptation, studying the case of the Manufacturing Human Resources Development Project in Dong Nai Province in Vietnam (hereafter called the Dong Nai MHRD Project). This project is unique given that it involves full ownership transfer from the donor to an ODA recipient. It started as a development cooperation project supported by Japanese government agencies but became a fully

funded Vietnamese local government project.

Based on the information and knowledge obtained by the authors, who worked as project experts, and the qualitative data from field interviews, this chapter examines the challenges and solutions in the project implementation process and the impact of the hands-on approach on the promotion of the translative adaptation process.

2. Literature Review for the Analytical Framework Development

As mentioned in Chapter 2, the translative adaptation process comprises three steps: (i) learning; (ii) adaption or internalization; and (iii) scaling-up. This process has been used when Japan was absorbing foreign knowledge and technologies. In particular, Japanese manufacturing firms have utilized the internalization process when adapting other country's technologies to their own. In addition, they have skillfully absorbed tacit knowledge in adapting advanced knowledge and technologies.

Knowledge creation theory explains the processes of mutual conversion between tacit knowledge and explicit knowledge (Nonaka and Hirose-Nishihara 2018). Its SECI model divides the processes into four interactive steps: (i) empathizing reality through actual experiences (Socialization); (ii) articulating the essence of awareness into concepts (Externalization); (iii) relating and systemizing the concept (Combination); and (iv) creating value in the form of technology, product, software, services, and experiences, and embodying knowledge (Internalization) (Nonaka and Hirose-Nishihara 2018, 6-7).

Table 7.1 records our comparison of the translative adaptation and the knowledge creation processes. Since translative adaptation assumes internalization of foreign models, recipients of foreign models must complete the knowledge creation process through which they convert tacit knowledge to explicit knowledge. The knowledge creation process is not necessary if, as in the normative approach, what is already explicit knowledge is used as is.[1] In contrast, the knowledge creation process is

[1] The normative approach in this volume focuses on disseminating international best practices formed in developed counties as norms. See Chapter 2 or Steiner-Khamsi (2014).

Table 7.1. Comparison of Translative Adaptation and Knowledge Creation Processes

Translative adaptation process	Knowledge creation process
Learning stage • Collecting knowledge of relevant policies and practices of other countries, in light of development priorities (policy options) • Analyzing both merits and demerits of each policy option	• Clarification of target tacit knowledge
Adaptation/internalization stage • Selecting policies to adopt from long-run viewpoints (strategic decision-making) • Examining adaptability and validity of introduced policies and technology (e.g., pilot projects) • Adjusting selected policies in accordance with economic, social, cultural, and institutional contexts of each country (recontextualization)	Socialization • Share direct experience and generate tacit knowledge (shared views)
	Externalization • Convert tacit knowledge to metaphor, image, or hypothesis through dialogues (conceptualization)
	Combination • Organize relevant concepts into prototype, a model, or a narrative (systematization)
	Internalization • Embody explicit knowledge by exploring the model narrative in thorough and action (implementation)
Scaling-up stage • Establishing institutions and necessary incentive systems for scaling-up. • Expanding policy application inside countries. • Disseminating translated models to other countries as a policy option.	

Source: Drafted by the authors based on Nonaka and Hirose-Nishihara (2018, 8) and Ohno (2024, 10).

essential for technical cooperation in a hands-on approach which aims to assist counterparts to develop the models based on their contexts.

In addition, the process of 'import replacement or substitution,' explained by Jacobs (1984, 35), may help us understand the process of translative adaptation and the relationship with the hands-on approach, if 'products' in the literature are replaced by 'policies.' The literature regards the ability of import replacement as one of the conditions for the development of a region. Cities produce products imported from other areas in their territory using their own technology and resources and consume the products thus produced. By repeating these processes, the cities soon start to export

the products, see its citizens earn more income, and eventually flourish. Jacobs (1984, 140) says, 'Development is a do-it-yourself process; for any economy it is either do it yourself or don't develop.' Referring to policy for attracting factories to provincial areas and developing countries, she also asserts, 'salvation from transplants is a vain hope for most regions avid to get them as a solution to unemployment' (Jacobs 1984, 102-03).

Jacobs (1984) divides import replacement into three phases: (i) in the import phase, advanced countries' technology and know-how are introduced; (ii) in the replacement phase, improvisations, such as small improvements and ingenious devices at the worksite level occur, prompting adaptation to internal production; and (iii) in the development phase, innovations are brought about, and production goods and services thus produced are applied to other sectors.

Based on the linkages between the three theoretical models explained above, namely translative adaptation, knowledge creation, and import replacement, this chapter analyzes the development processes of the Dong Nai MHRD Project by paying attention to the three steps of the translative adaptation process and examines challenges and responses of the project counterparts in reference to the knowledge creation and import replacement theories.

3. Background of the Project Formulation

The Project was formulated based on the needs of both the Vietnamese and Japanese sides. The Vietnamese government has been attempting to develop supporting industries, including suppliers of materials, parts, and equipment to assemblers (see Mori 2019). An increasing number of Japanese suppliers, mostly small and medium size enterprises (SMEs), consider Vietnam to be an investment destination due to the abundance of quality workers and the shift of their customers to Vietnam. Japanese national and local governments have also been promoting SME overseas investment. As a result, the development of manufacturing human resources, such as skilled production line operators and technicians has become a key issue for both sides. While Vietnam needs to increase the supply of skilled workers to attract more foreign direct investment (FDI) from Japanese supporting industries, Japanese suppliers must secure a sufficient number of skilled workers in order to improve productivity and quality.

3.1. Supporting industry development and Japanese FDI

3.1.1. Supporting industry development for Vietnam's industrialization

The Vietnamese government has been paying increasing attention to the development of supporting industries as a driver for industrialization (Mori 2019). In its Socio-economic Development Strategy 2011-2020, it identified industrialization as its overarching goal and viewed the establishment of a socialism-oriented market economy system, development of transport and urban infrastructure, and training of human resources as its three priority issues. Regarding the third priority, the national goal was to expand the scale of vocational training (Government of Vietnam 2011).

The Vietnamese government has also issued policies for supporting industry development, such as the supporting industry development master plan (MOIT 2014). In order to develop supporting industries, it is necessary to promote technology transfer from advanced countries and develop skilled workers who can absorb these technologies. According to the direction of the national policies, some local governments have been trying to develop supporting industries by promoting FDI from developed countries, including Japan (Mori 2019).

The government of Dong Nai province in south Vietnam, where the project was implemented, is one of these active local governments. In April 2013, the Dong Nai People's Committee (the Dong Nai provincial government) entered into a cooperation agreement with the Kinki Bureau of Economy, Trade and Industry to promote economic development in the Kansai region and Vietnam (METI-KANSAI 2023).[2] The agreement was made based on the previous cooperation between industrial zones in the Dong Nai province and Japanese partners, including the Osaka prefectural government and economic organizations of the Kansai region, for the development of supporting industries through the promotion of investment from Japanese companies in the Kansai region. Towards the implementation of the agreement, the development of *Monozukuri* (manufacturing) human resources was a key issue, since many Japanese companies which have been operating in the province had reported the lack of skilled workers as a main challenge (METI-KANSAI 2013).

[2] The 'Kansai region' covered by METI KANSAI includes seven prefectures, namely Fukui, Shiga, Kyoto, Osaka, Hyogo, Nara, and Wakayama Prefectures) (METI-KANSAI 2014).

3.1.2. Challenges of Japanese SMEs in Vietnam

Japanese SMEs, which are an important part of supporting industries, have been increasing their overseas investment (Ohno 2013). This is not only because their clients, which are often large companies, are shifting their factories overseas but also because it is becoming more difficult for SMEs to secure human resources due to the decreasing interest in manufacturing among youths and the declining youth population (Ryoke 2013).

Therefore, many SMEs have been investing in Vietnam where the youth population is still large and diligent low-wage workers are abundant, in order to secure a sufficient number of workers. However, many of them face challenges, such as frequent job-hopping and a lack of skilled workers, such as engineers, technicians, and production line leaders.

This situation also applies to SMEs from the Kansai region. According to a study conducted by the Kansai Bureau of the Economy, Trade and Industry, many of the companies surveyed indicated challenges in developing and retaining local managerial personnel and retaining local workers and encouraging them to become part of teams after they advanced into Vietnam (METI-KANSAI 2013) (see Table 7.2).

The study also found the efforts made by Japanese SMEs for securing skilled workers and their recruitment practices. Prior to the establishment of factories in Vietnam, some Japanese SMEs trained Vietnamese workers in Japan. Some of those workers were recruited under technical internship training programs.[3] Others studied in Japan and were recruited for managerial posts. After advancing into Asia, they tend to focus on recruiting senior managers or professional staff members who work for general affairs departments through staff placement services, and then recruit production line workers through advertisements on factory bulletin boards and introductions by employees.

Nonetheless, the study reported various challenges related to human resource management faced by SMEs from the Kansai region. Many of them suffer from high turnover rates or worker job-hopping. The study also expected future challenges in training production line leaders or

[3] See MLHW (2023).

Table 7.2. Changes in Important Issues Before, When, and After SMEs Advanced into Vietnam

Rank	Before advancing into Vietnam	%	When advancing into Vietnam	%	After advancing into Vietnam	%
1	Market characteristics and consumer needs	22.1	Investment restrictions and environmental and other regulations	11.8	Developing and retaining local managerial personnel	17.6
2	Local labor management, labor situation, etc.	13.0	Discovery of contractors to which production is outsourced, business partners, etc.	9.0	Securing local workers or similar and encouraging them to become part of teams	11.8
3	Local taxation systems, regulations, preferential treatment for investors, etc.	12.6	Developing and retaining local managerial personnel	7.3	Securing and discovering suppliers of equipment and materials	7.3
4	Discovery of contractors to which production is outsourced, business partners, etc.	8.4	Procedures for trade and customs clearance	6.9	Unexpected cost increases after advancing into Vietnam	4.6
5	Specific examples of companies operating in Asian emerging economies, etc.	7.6	Securing and discovering suppliers of equipment and materials	6.5	Countermeasures for intellectual property such as those against the drainage of know-how and imitation	3.4
6	Securing and discovering suppliers of equipment and materials	4.6	Securing local workers or similar and encouraging them to become part of teams	6.5	Discovery of contractors to which production is outsourced, business partners, etc.	3.4
7	Investment restrictions and environmental and other regulations	3.8	Local taxation systems, regulations, preferential treatment for investors, etc.	4.2	Local labor management, labor situation, etc.	3.1
8	Developing and retaining local managerial personnel	1.5	Local labor management, labor situation, etc.	2.7	Market characteristics and consumer needs	1.5
9	Procedures for trade and customs clearance	1.1	Tax-related procedures	2.7	Investment restrictions and environmental and other regulations	1.5
10	Securing local workers or similar and encouraging them to become part of teams	0.8	Unexpected cost increases after advancing into Vietnam	2.3	Tax-related procedures	1.5

Source: Translated by the authors based on METI-KANSAI (2013, 84).

supervisors, embedding Japanese-style production management systems, and transferring technologies from Japan to overseas factories.

3.2. Skills needs of Japanese-affiliated companies in Dong Nai

This section explores skills needs of Japanese-affiliated companies (hereafter called Japanese companies), in particular SMEs in Dong Nai province, based on the results of the field interviews conducted by Japanese experts during the inception phase of the Dong Nai MHRD Project.[4] This rapid study aimed to examine how Japanese companies are securing and training human resources and the present situation of educational institutions through interviews with 11 Japanese companies and two industrial zone management firms, as well as Vietnamese staff working in these companies.

3.2.1. Skills and training needs

The study found that interviewed Japanese companies face skills shortages. In particular, they reported a shortage of managers. They are also experiencing shortages of intermediate workers, such supervisors, skilled technicians, and skilled workers, such as operators of conventional turning, milling, and welders, probably because many of the interviewed firms are parts suppliers.[5] On the other hand, they reported that it was easier to recruit production line operators through advertisements posted on websites and bulletin boards in front of factories.

Furthermore, the interview results indicated that Japanese companies prefer experienced workers rather than fresh graduates of universities or TVET institutions. Since many interviewed companies have just started operations, it can be inferred that they lack the time needed to train unskilled workers. In particular, they indicated high demand for administrative staff who can speak Japanese and production site workers who have obtained relevant experience through working for other companies in Vietnam or technical internships in Japan.

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4 The primary author of this chapter participated in this study.

5 This is because most interviewed companies are parts suppliers which tend to require more skilled workers at the intermediate occupation levels, such as technicians. Also, there is a certain level of agglomeration of supporting industries in Dong Nai province. The high demand for skilled workers, in particular intermediate workers, does not necessarily apply to all regions in Vietnam (Mori 2021).

Interviewed firms indicated skills gaps for basic skills and they anticipated education and training institutions would strengthen training of these skills. Basic skills include 5S, *Kaizen*, safety, *Ho-Ren-So* (Japanese term which means timely reporting to and consultation with supervisors).[6] They also indicated training needs for simple Japanese terms related machinery operation, such as the meaning of safety-related colors and the basic terms 'upper, lower, left, and right' and rules. In fact, the lack of those skills among new graduates are making Japanese companies prefer to recruit experienced workers. One interviewee from a Japanese company stated they cannot allow new graduates (who do not have basic knowledge of 5S and safety) to work in the production side immediately since tremendous trouble will be caused if they are injured and they do not have enough time to train them in such basic skills.

The above findings were reconfirmed through interviews with partnering TVET institutions of the Dong Nai MHRD Project and their graduates working for Japanese companies. Some graduates said that since school education focused on acquiring knowledge, they needed to be re-trained to acquire practical skills after they entered a company. They also pointed out that schools did not have up-to-date machinery and equipment. Furthermore, a graduate from a Japanese-language department reported that they did not have sufficient language proficiency to communicate with Japanese staff due to lack of exercise in a school.[7]

3.2.2. Technical cooperation needs

Based on the results of the above study, the technical cooperation needs for the Dong Nai MHRD Project were identified. First, the study found high demand for technicians and production line leaders, indicating a need to train technicians. Due to high job turnover among Japanese companies, it

[6] The 5S approach consists of: (i) sorting; (ii) setting in order; (iii) shining; (iv) standardizing; and (v) sustaining (JICA 2018). It is widely recognized by enterprises as a useful means to improve productivity and work environments. The core value of *Kaizen* is placed in creating an attitude shared among all members of an organization who consistently pursue advanced levels of quality and productivity, and not just applying its management method. *Kaizen* is a comprehensive system that consists of broad technologies such as 5S, 7 Quality Control (QC) tools, Total Quality Management (TQM), Toyota Production System (TPS), Lean Production System, etc. to pursue activities under this core value. See JICA (2018).

[7] The Project attempted to introduce Japanese terms used at the worksite into the curriculum. However, it faced many challenges, including securing qualified teachers. As a result, the project's intervention focused on 5S and safety.

is necessary for the project to encourage students to continue to develop their skills and pursue long-term careers in the manufacturing sector. To achieve this, it was assumed that *Kosen*, which is the combination of theoretical and practical training practiced in Japanese technical colleges, would help students learn the meaning and value of pursuing a long-term career as practical engineers or technicians in the manufacturing sector.[8]

Second, the Japanese companies require workers to possess workplace management knowledge and skills, such as 5S and safety. The interview results indicated the need to train manufacturing human resources who have basic workplace abilities. In this chapter, basic workplace abilities comprise a set of fundamental skills required for workers at production sites, such as 5S, workplace safety, communication skills, and knowledge of basic technical terms. As mentioned above, lack of those abilities discourages companies from hiring new graduates. However, in Vietnam, it seems that little education on keeping things tidy and in order is provided at home in childhood. Furthermore, it was hard to find TVET or higher education institutions in the province which carry out effective curricula for the improvement of 5S and safety.[9]

Finally, internship programs should be more effective in terms of training and a win-win method for both students and employers. Internships were considered being more effective if students could improve basic workplace abilities, such as 5S and safety and obtain better employment opportunities in Japanese companies requiring those skills. However, various issues were identified to help improve internships provided by TVET institutions. Some interviewed Japanese SMEs which were active in developing human resources welcome internships as an effective system for identifying motivated students. Nonetheless, others reported some challenges, such as: (i) unclear working conditions; (ii) difficulty in dealing with requests made by different schools; and (iii) the fact that some students end up finding employment at other companies after completing their internships. These issues must be addressed through cooperation between TVET institutions and companies. However, the relationship between them was found to be very weak, making cooperation a challenge.

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[8] See Section 4.1.2 for further details of Japanese technical colleges, *Kosen*. Also, one of the Japanese project experts was a professor at a technical college in Osaka, Osaka Prefectural University College of Technology.

[9] There are some TVET institutions in other regions of Vietnam that have started providing students with training in those skills (JICA 2014b).

Thus, the Dong Nai MHRD Project decided to enhance the coordination function of a relevant government agency, the Dong Nai Industrial Zone Authority (DIZA), a Vietnamese counterpart, for facilitating partnerships between TVET institutions and Japanese SMEs.

4. Overview of the Dong Nai Manufacturing Human Resources Development Project in Vietnam

4.1. Project design and relevant experience in Japan

4.1.1. Designing the project

For the reasons explained in the previous section, the Dong Nai MHRD Project was formulated to ensure that Japanese-affiliated manufacturing SMEs operating in Dong Nai province secure and retain skilled workers who graduate from local education and training institutions. Furthermore, the development objective of the Dong Nai MHRD Project was to contribute to Vietnam's industrialization through the development of supporting industries.

The Vietnamese counterparts consisted of a local government agency and TVET institutions. The leading counterpart of the Dong Nai MHRD Project was DIZA, which has been playing a key role to attract FDI from Japanese companies to the province. The other counterparts were two education and training institutions, namely the Long Thanh-Nhung Trach Vocational College, which was renamed Dong Nai College of High Technology (DCoHT) later, and Lac Hong University (LHU). These two institutions were recommended by DIZA as candidates for 'model' TVET institutions that are supposed to develop and implement training programs in accordance with skills needs of Japanese companies in the province.[10]

The Dong Nai MHRD Project had two original outputs: (i) the establishment of a system that enabled the province's TVET institutions to develop and continuously improve training programs that meet the needs of Japanese companies; and (ii) the development of DIZA's capacity to facilitate partnerships between TVET institutions and Japanese SMEs.

[10] Lac Hong University (LHU) provides a university course but also a vocational college course. Therefore, this chapter categorizes LHU as a TVET institution, although it is also a higher education institution.

However, these outputs are refined through the field interview described in Section 3.2 and discussion with Vietnamese counterparts, as described in Section 4.2.

The implementation modality of the Dong Nai MHRD Project was: (i) the dispatch of Japanese experts to Dong Nai province who provided the Vietnamese counterparts with technical guidance through workshops and meetings; (ii) training sessions organized in Japan, each of which was around one to two weeks; and (iii) on-line consultation and meetings through which both sides monitored the progress of activities and output delivery periodically.

4.1.2. Japanese experience with manufacturing human resources development

The Dong Nai MHRD Project was designed in reference to Japanese experience in manufacturing human resource development, in particular the following system and initiative.

4.1.2.1. Technical colleges and industrial high schools in the industrialization of Japan

The Dong Nai MHRD Project aimed to transfer teaching methods and other knowledge from technical colleges (*Kosen*) and industrial high schools through two experts who have long experience in teaching in these types of institutions in Osaka. Those two types of TVET institutions were developed in order to address the shortage of skilled workers.

In Japan, technical colleges were established in the postwar period when Japan strove to recover from the devastation and chaos after World War II and achieve rapid economic growth. Technical colleges were legally established in 1961, when the lack of engineers came to light. Establishing education and training institutions to train engineers was becoming an urgent issue as the country's industrial advancement due to the income-doubling plan advocated by the administration of Hayato Ikeda, the sixtieth Prime Minister. Thus, the industrial community put forward a request for a school system to supply leading engineers by providing substantial practical training and offering specialized subjects. In 1962, 12 national technical colleges were opened.

The first batch of students graduated and entered the labor market

in March 1967. Since then, regardless of the increase in the number of technical colleges established and economic performance, these colleges have achieved a nearly 100 per cent employment rate for graduates who are working in firms as engineers or technicians mainly in production sites. In short, they have gradually developed their trust with industry and now they are recognized as a source of practical engineers by industry (Gekkan Kosen 2020; National Institute of Technology 2012). Similarly, industrial high schools have been training human resources who serve as technicians supporting experienced engineers and supervisors at worksites since the postwar period of rapid economic growth. The skills and knowledge accumulated in the above two types of institutions are considered relevant to current Vietnam. Since manufacturing companies in Vietnam lack intermediate workers, it is necessary to increase the supply of technicians and supervisors in order to achieve industrialization. In particular, the Dong Nai MHRD Project decided to encourage partnering TVET institutions to develop training programs for 5S and safety by comprising theory and practice, referring to the teaching method of Japanese technical colleges.

4.1.2.2. The regional project to develop local industry leaders: Craftsmen 21

The Dong Nai MHRD Project referred to the experience of the Project to Develop Supporters of Local Industries, entitled 'Craftsmen 21,' for the development of an institutional mechanism to facilitate the partnership between TVET institutions and Japanese SMEs. The 'Craftsmen 21' project was implemented in Osaka from 2007 to 2010 to develop manufacturing human resources through partnerships between technical high schools and local industry.

The project was supported by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Ministry of Economy, Trade and Industry (METI). The project was carried out with four schools run by the Osaka prefectural government: (i) Imamiya Technical High School; (ii) Jyoto Technical High School; (iii) Fuse Technical High School; and (iv) Sakai Technical High School. The project was implemented by the Osaka Labor Association, in cooperation with the Osaka Prefectural Board of Education and the Department of Commerce, Industry, and Labor of the Osaka Prefectural Government.

Many manufacturing SMEs are concentrated in Osaka, but most technical

high school graduates in Osaka are recruited by large companies or medium-sized companies who recruit graduates from these schools every year. Few of the graduates joined local SMEs, in part because they do not recruit new employees regularly. Accordingly, the partnerships between technical high schools and local SMEs are weak.

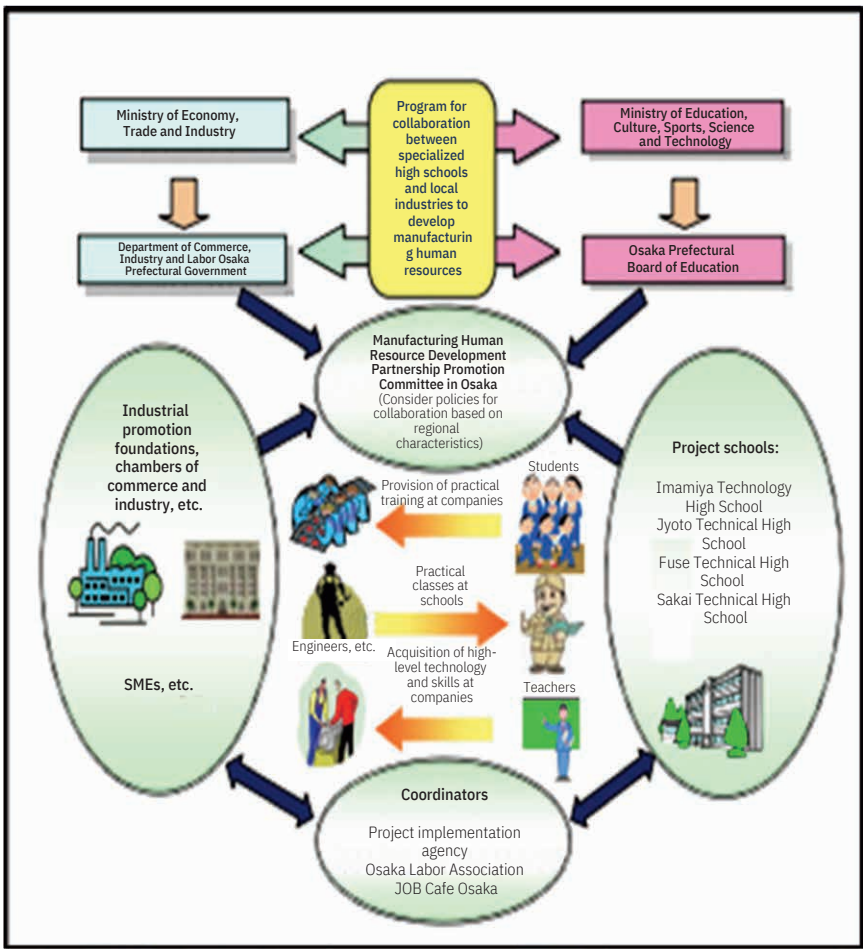
In order to develop manufacturing human resources to work in local industries, the project established a consortium called the Manufacturing Human Resource Development Partnership Promotion Committee' in Osaka, consisting of representatives from local manufacturers and four technical schools. The committee facilitated the introduction of practical education into technical high schools by: (i) promoting work-based learning in enterprises and joint research; and (ii) providing teachers and students with more opportunities to learn excellent technologies and skills needed by local industries (see Figure 7.1).

Furthermore, the project developed training programs for the development of manufacturing human resources with practical skills. It also developed teaching materials, including a manual for introducing manufacturing human resource development programs and a manufacturing human resource development case book and distributed these teaching materials to manufacturing companies and technical high schools. In order to sustain the project's results, it assisted each of four technical high schools in establishing their own compositum with local SMEs before its completion.

In reference to this initiative in Osaka, the Dong Nai MHRD Project aimed to establish a consortium consisting of Japanese SMEs and partnering TVET institutions. This consortium in Dong Nai province was expected to promote partnerships among constituents and provide TVET institutions with opportunities for determining industry skills needs.

4.2. Implementation of the project

The Dong Nai MHRD Project, which took place from 2014 to 2022, is unique since it started as an ODA project (Phase I) but later became financed by the Dong Nai provincial government (Phase II). Phase I of the project focused on the development and implementation of 5S and workplace safety training programs at two model TVET institutions, DCoHT and LHU, and the establishment of a consortium between two



Source: Translated by the authors based on MEXT (2007, 1).

Figure 7.1. Osaka Prefecture's Development of Next Generation Leaders through Organic Partnerships with Local Industries

institutions and Japanese manufacturing SMEs facilitated by DIZA. In Phase II, two model TVET institutions, whose capacities were developed Phase I, transferred their knowledge and experiences to two new TVET institutions through partnerships facilitated by DIZA. In other words, Phase I of the project went through the learning and adaptation stages of the translative adaptation process, while the project conducted scaling-up and dissemination in Phase II (see Chapter 2).

4.2.1. Phase I: ODA projects

4.2.1.1. Project overview

In the early stage of Phase I, the two original project outputs indicated in Section 4.1.1 were expanded to three based on the results of the field interview described in Section 3.2 and discussion with Vietnamese counterparts as follows: (i) the development of manufacturing human resources who have basic workplace abilities through the development and implementation of an enhanced training course for workplace safety; (ii) the development of manufacturing human resources who aspire to pursue careers in Japanese manufacturing companies through the development and implementation of 5S training courses and the capacity development of lecturers at two model TVET institutions; and (iii) the establishment of a consortium, as an institutional mechanism for sustainable partnerships between TVET institutions and Japanese companies, and the capacity development of DIZA as a coordinator of the consortium (see Table 7.3).

Phase I consisted of two consecutive projects supported by different

Table 7.3. Project Outputs and Key Activities

Output	Key activity
1. Development of manufacturing human resources who have basic workplace skills	• Develop and implement a curriculum for a training course which provides practical knowledge and skills to implement workplace safety, in order to increase employment opportunities for students of model TVET institutions.
2. Development of manufacturing human resources who aspire to pursue careers in Japanese manufacturing companies	• Develop and implement 5S training courses with sufficient practical lessons. • Develop the capacity of lecturers at model TVET institutions to conduct practical lessons effectively by motivating students to develop manufacturing sector careers. • Develop training of trainers (ToT) programs to promote mutual learning of lecturers and scale up project results at model TVET institutions.
3. Development of an institutional mechanism for sustainable partnerships between TVET institutions and Japanese manufacturing companies	• Develop a consortium as a system which enables TVET institutions to continuously improve curricula by obtaining industry feedback and develop partnerships with Japanese SMEs. • Develop the capacity of DIZA to coordinate partnerships between TVET institutions and Japanese manufacturing companies.

Source: Drafted by the authors.

Japanese government agencies. The first project was conducted under the JICA Partnership Program from July 2014 to March 2017 (JICA 2014a; PREX 2018). The second project was conducted under a METI scheme of the entitled Technical Cooperation Utilization Type/Emerging Market Development Program, from May 2017 to March 2018 (through the Association of Overseas Technical Cooperation and Sustainable Partnerships: AOTS).[11] The first project covered the development and implementation of the new course on 5S and safety. The second project focused on the evaluation of the courses and the development of action plans to improve course quality and expand it beyond pilot faculties in two TVET institutions. In this sense, the first project focused on the 'Plan and Do' stage of the training process management process described in Chapter 2, while the second project went through the 'Check and Act' stage.

While the two projects were funded by different organizations, the same implementation structure was maintained. The first project under the JICA Partnership Program was implemented by the Osaka prefectural government (as a proposer) and the Pacific Resource Exchange Center (PREX) (as an implementing agent), in cooperation with the Kansai Bureau of Economy, Trade and Industry (METI-KANSAI) and the Kinki Regional SME Overseas Development Support Conference established by the Bureau. The leading Vietnamese counterpart was DIZA. The implementation structure of the second project commissioned by METI/AOTS is almost the same as the first project, except for the exclusion of the Osaka prefectural government.[12] The structure of main implementation team is described in Table 7.4.

4.2.1.2. Characteristics of 5S and safety courses

In Phase I, the Dong Nai MHRD Project delivered five key outputs: (i) the development and implementation of 5S and safety courses at two model TVET institutions; (ii) the development of lecturers' capacities for carrying out these courses with practical lessons; (iii) the establishment of safety experience rooms at two TVET institutions; (iv) the development of training of trainers (ToT) programs at two TVET institutions; and (v) the establishment of the Project Promotion Committee, which consists

[11] See METI KANSAI (2017).

[12] However, an official of the Osaka prefectural government continued to work as a project expert.

Table 7.4. Implementation Structure of the Phase I Project

Country	Details
Vietnam	DIZA: Deputy director, manager, and staff [Model TVET institutions] • DCoHT: Rector and a total of eight lecturers (two core teachers) • LHU: Vice Rector and a total of eight lecturers (four core teachers)
Japan	[Implementing agent] PREX (Two main staff members) [Four experts] • Professor from Osaka Prefectural University College of Technology • Part-time lecturer (former teacher) from technical high school in Osaka* • Former JICA expert for the Project for Human Resource Development of Technicians at the Hanoi University of Industry (HaUI) (secondary author) • Osaka prefectural government official (primary author)

Note: *In the second project commissioned by METI, a part-time lecturer at a technical high school in Osaka was excluded from the expert team for personal reasons.
Source: Drafted by the authors.

of Japanese manufacturing SMEs, two TVET institutions, and DIZA (see Table 7.5). To deliver these outputs, technical cooperation was provided through training in Japan and on-site technical guidance was provided by Japanese experts who went to Dong Nai for one to two weeks missions.

The 5S and safety courses developed through the project have the following characteristics: (i) stand-alone courses for new students; (ii) practice orientation with hand-made tools; (iii) constant interaction between lecturers and students; and (iv) standardization with lesson plans. First, the 5S and safety courses were developed as stand-alone regular courses, not as part of other courses, ad-hoc courses, or extra-curricular activities. For example, Hanoi University of Industry (HaUI) has also been providing 5S training, but as an extra-curricular activity (see JICA 2014b). In contrast, two model TVET institutions decided to establish new 5S and safety courses, after examining another option to integrate 5S and safety into existing courses. Regarding DCoHT, the Rector expressed enthusiasm for and commitment to establish a new 5S course, integrating some modules for safety, as part of introductory subjects for all new students. They also took advantage of the autonomy recently given by the government to develop and approve a new course by themselves (see Mori and Stroud 2022). In the case of LHU, they developed a new 5S and safety course as value added to a set of existing courses for soft skills development. Two TVET institutions set up the course in different way. While DCoHT developed one course for 5S and electric and machine

Table 7.5. Main Results and Technical Cooperation of the Phase I Project

Item	Details
Main results	• 5S and safety courses were developed and implemented at two model TVET institutions. • The capacity of lecturers to carry out the courses was developed. • Safety experience rooms were established according to the design made by lecturers. • ToT programs for two model TVET institutions were developed and implemented. • The Project Promotion Committee was convened four times, and opinions were exchanged between Japanese manufacturing companies and Vietnamese counterparts.
Technical cooperation	• Training in Japan (three sessions): Visits to companies, training by experts in 5S and safety, and visits to and training at universities, technical colleges, and technical high schools. • Technical guidance provided in Dong Nai (seven sessions) for: (i) the development and implementation of curriculum for 5S and safety courses; (ii) the development and implementation of ToT programs, including trial lessons and others; (iii) the establishment of safety experience rooms, including equipment and other facilities; and (iv) the establishment and organization of a Project Promotion Committee.

Source: Drafted by the authors.

safety, LHU developed two separate courses for 5S and safety.[13]

Second, these new courses consist of many practical lessons and exercises. This is based on technical guidance from Japanese experts who stressed that it is difficult to maintain the attention and interest of students who do not have working experience in these sorts of practical courses if the majority of the class time is a theoretical lecture in classroom. Therefore, each module includes practical lessons or exercises, such as a game to assemble LEGO cars with a group, which is part of similar courses in some Japanese enterprises and universities (see Table 7.6).[14] In addition, students were required to submit a proposal to improve 5S and safety in classrooms or workshops or implement 5S in selected workshops at the

[13] DCoHT integrated selected elements of safety to the 5S course, in part because they have another mandatory occupational safety and health course for public vocational training colleges, according to the guidance form the Ministry of Labour, Invalids, and Social Affairs.

[14] Lecturers at two TVET institutions learned the basics of LEGO game at Osaka Institute of Technologies and elaborated them together with Japanese project experts in local contexts.

Table 7.6. Curriculum Outline of 5S Course in DCoHT

Module Name	Main Contents	Hour
1. Basic Concept of 3S/5S	• Introduction of the 3S/5S concept and actual 3S implementation cases in enterprises through a DVD show. • Interactive lecture about the basic concept of 3S with presentation of the cases for which 3S can be applied in classrooms and enterprises (with photos). 【Practice】 Learning the basics of 5S by assembling a LEGO automobile.	4.5
2. Exercising 3S in Workshops (*Kaizen* Activities)	• Carrying out *kaizen* activities in selected workshops by utilizing 3S methods. 【Practice】 Identifying problems by utilizing 3S methods; drafting and implementing action plans; and presenting the results of *kaizen* activities in Module 6.	6.0
3. Basics of Electric Safety	• Overview of electrical accidents and preventive measures. • Proper ways to use a tester. 【Practice】 Experiencing the risks of electrification by using an electrification simulator in the safety experience room and learning preventive measures and how to use necessary safety equipment. Learning proper ways to use ladders in electrical installations.	2.0
4. Basics of Machine Safety	• Overview of machine-related accidents and preventive measures. 【Practice】 Experiencing the risks of machine-related accidents by using a tool-dropping simulator and a rolling simulator in the safety experience room and learning preventive measures and how to use necessary safety equipment.	2.0
5. Basics of Chemical Safety	• Overview of accidents in chemical laboratories and preventive measures.	1.5
6. Presentation of 3S *Kaizen* Results	• Group presentations about the results of *kaizen* activities by applying 3S methods. • Discussion on achievements and challenges of students' *kaizen* activities. • Comments and advice from rector, lecturers and enterprise experts.	4.0
	Total Course Hours	20.0
Factory Tour	Learning how enterprises implement 3S and safety measures.	2.0
Lecture by Enterprise Experts	Learning how enterprises implement 3S and safety measures.	1.5

Source: Drafted by the authors.

end of the courses. Students are required to design a project from earlier training modules rather than doing everything in the last module.

In addition, some new concepts or methods were integrated in those new courses. The safety course included two new elements, namely *Kiken Yochi Training* (KYT) (hazard prediction training)[15] and risk assessment. Regarding 5S, the PDCA (Plan, Do, Check, Act) cycle was enhanced. The Vietnamese counterparts learned the basic concept of these new elements through training in Japan, and then adapted them, considering the capacity of lecturers, students, and stages of industrial development in Vietnam, with technical guidance form Japanese experts.[16]

Third, the courses are delivered interactively. Lectures are encouraged to communicate with students throughout the courses throughout Q&A. Also, most exercises, such as 5S LEGO game and practical lessons, such as 5S and safety project, are conducted through group work.

Finally, course delivery was standardized through the development of common teaching materials, trial lessons, and the ToT programs. A possible drawback of a course with many practical or interactive lessons is the difference in class quality depending on who teaches the course. In order to avoid this problem, two TVET institutions developed lesson plans and handouts which were shared with all lecturers in charge of the courses. Also, trial lessons provided them with opportunities for mutual learning and standardization of teaching methods. Moreover, the ToT programs enabled lecturers to align their understanding of new elements and teaching methods of practical lessons.

4.2.1.3. Key success factors

The two model institutions started implementing the 5S and safety courses and had trained 4,250 students in total by 2019 (see Table 7.7). The following elements were key to achieving this result: (i) consensus on a strategy for developing practical lessons; (ii) adaptation of technical cooperation delivery on the Japanese side; (iii) commitment of TVET institution senior leaders; (iv) healthy competition and mutual learning

[15] KYT is a training method whereby, through pre-work meetings or other procedures, workers are given advance warning of the kinds of unsafe conditions or unsafe behavior that are in their immediate sphere of activity, thereby ensuring their own personal safety and that of those around them. See: JICOSH (2024).

[16] The curricula of DCoHT and LHU includes 3S, or *Seiri, Seiton*, and *Seiso* since Japanese experts recommended focusing on 3S rather than trying to cover the entire 5S. However, they have started providing training on the rest of 5S (*Seiketsu* and *Shitsuke*), through the implementation of 5S in workshops. Therefore, this chapter considers that two model TVET institutions have provided 5S training courses.

Table 7.7. Number of Participants in the 5S and Safety Courses (2016-2019)

Institution	Course*	2016	2017	2018	2019**	Total
Dong Nai College of High Technology (DCoHT)	5S	72	430	1,144	206	1,852
	Safety	72	430	1,144	206	1,852
	Subtotal	144	860	2,288	412	3,704
Lac Hong University (LHU)	5S	93	84	96	N/A	273
	Safety	93	84	96	N/A	273
	Subtotal	186	168	192	0	546
Total		**330**	**1,028**	**2,480**	**412**	**4,250**

Note: *DCoHT provided a combined 5S and safety course, while LHU offered separate 5S and safety courses. However, it is likely that the same students participated in both courses.
**LHU has not yet accumulated participant data for 2019 as of Dec. 2019.
Source: Drafted by the authors based on data provided by DCoHT and LHU.

between the two model TVET institutions, which created incremental innovation; and (v) identification of strong industry partners.

First, the perceptions of practical lessons had to be aligned between the Vietnamese counterparts and Japanese experts. After the first training session in Japan, which included visits to training centers at an industrial university and Japanese companies, the Vietnamese counterparts thought that they had to purchase high-end equipment to conduct 5S and safety training. However, the Japanese experts recommended utilizing existing equipment and tools as well as materials available in local markets to develop training equipment and tools. This is because it is neither feasible nor sustainable to purchase expensive equipment, given the financial constraints on Vietnamese TVET institutions. The Vietnamese counterparts gradually understood this recommendation through many discussions and demonstrations, including by developing a simple simulator for the safety experience room in cooperation with a DCoHT lecturer. This also accelerated healthy competition between the two model TVET institutions, as explained below.

Second, the Japanese experts had to adapt their experiences to provide technical guidance for the Vietnamese counterparts. In Japan, the concepts of 5S and safety have taken root in the home and at schools as typified by efforts to clean and keep things tidy and in order. Since basic 5S has become tacit knowledge, technical colleges and industrial high schools do not have a course designed for 5S. Therefore, Japanese experts had

to develop a new proposed 5S curriculum structure for the model TVET institutions. In other words, they needed to convert their tacit knowledge into explicit knowledge (see Nonaka and Hirose-Nishihara 2018). In this sense, they went through the knowledge co-creation process (see Ohno 2016).

Third, the two model TVET institutions accelerated results deliver after senior leaders of the institutions had started demonstrating their commitment and interest in the Dong Nai MHRD Project. However, the model institutions demonstrated different levels of commitment. At DCoHT the Rector showed a strong commitment to the project from the beginning. He joined all training sessions in Japan, including the first one, and instructed his teaching staff to develop a 5S and safety course as soon as possible. The role of Japanese experts was to help him to develop feasible plan to start this course, while allowing sufficient time for the development of teaching materials, trial lessons, and training of trainers. In contrast, progress at LHU was rather sluggish in the first year, despite efforts made by lecturers participating in the Dong Nai MHRD Project. Therefore, the Japanese expert team had a designated meeting with the Vice Rector to seek his support together with LHU lecturers. After joining the ToT program, the Vice Rector started showing increasing interest in the project. This resulted in the development of the 5S and safety course becoming a LHU organizational initiative, and not simply the initiative of a few lecturers participating in the project.

Fourth, healthy competition between the two TVET institutions encouraged them to improve training programs. They demonstrated different comparative advantages in the process of developing their 5S and safety courses. For example, LHU demonstrated their design skills, such as the development of curriculum and hand-made safety simulators in its safety experience room. On the other hand, DCoHT's comparative advantage was implementation. They set up a safety experience room faster than LHU with a set of simple hand-made equipment and existing tools. LHU developed more sophisticated simulators by referring to DCoHT's room. Furthermore, DCoHT developed various teaching materials and tools for exercises and practical lessons, such as handouts for the 5S LEGO game and reusable worksheets for risk assessment exercises. They also added a 5S implementation module to the course, encouraging lecturers and students by utilizing materials available in the institution, such rubber tubes to set tools in order. In short, healthy competition between the two

model TVET institutions led to incremental innovation, some of which even went beyond Japanese experts' recommendation and expectation.[17]

Finally, identification of Japanese SMEs which showed strong interest in the Dong Nai MHRD Project gave the Vietnamese counterparts confidence to continue their activities. For example, Japanese SMEs which are members of the Project Promotion Committee participated in study tours led by lecturers and students. At the later stage of the project, they requested that two model TVET institutions provide short-term training on 5S and safety for their employees.[18] This gave the lecturers confidence to develop partnerships with Japanese SMEs. This also occurred at another TVET institution supported by JICA, HaUI (see Chapter 3).

4.2.2. Phase II: The project funded by the Dong Nai provincial government

4.2.2.1. Project overview

The Phase II project was the full initiative of the Dong Nai provincial government, which intended to disseminate the results of the Phase I project to other TVET or higher education institutions. The project was conducted from May 2018 to November 2022 with the three key outputs: (i) knowledge and skills transfer from the two model TVET institutions to other institutions in Dong Nai province through the ToT program; (ii) enhancement of the Project Promotion Committee by strengthening DIZA's coordination capacity and adding more committee members; and (iii) the development of sustainable training of trainers systems by elaborating a plan to establish a ToT center which continues to train 5S and safety trainers by retaining master trainers from DCoHT and LHU (see Table 7.8).

The Phase II project was implemented by DIZA. PREX was commissioned as a coordination organization on the Japanese side in order to mobilize Japanese experts, all of whom had continued to work since the Phase I project (see Table 7.9). While DCoHT and LHU remained in the project team as local trainers, three new TVET and higher education institutions

[17] In production sites of companies, the 'incremental innovation' can be produced through a *Kaizen* approach. See Homma (2024, 329).

[18] DCoHT provided a short-term course on workplace safety for Nankai Kinzoku Vietnam in February 2017, while the joint team of LHU and DCoHT provided a short-term course on Techno Global Vietnam in August 2017.

Table 7.8. Output and Key Activities of the Phase II project

Output	Key activities
1. Knowledge and skills transfer from two model institutions to other institutions in Dong Nai	• Select target TVET institutions. • Set up the master trainer team. • Develop the ToT program. • Conduct on-site technical guidance.
2. Enhancement of the Project Promotion Committee.	• Develop DIZA's coordination capacity to organize the committee meetings. • Expand the committee members by including new institutions and Japanese companies.
3. Development of sustainable systems of training of trainers	• Develop a plan to establish a ToT center to continuously train 5S and safety trainers by retaining master trainers from two model TVET institutions.

Source: Drafted by the authors.

Table 7.9. Implementation Structure of the Phase II Project

Country	Details
Vietnam	[Implementing Agency] DIZA: Deputy Director, manager, and staff [Model TVET institutions] • DCoHT: Five lecturers in total • LHU: Three lecturers in total [New partnering institutions] • DNU: Six persons in total • DNETC: Two persons in total • TCKTKT2: Two persons in total
Japan	[Coordinator] PREX (Two staff) [Three experts] • Professor from Osaka Prefectural University College of Technology • Former JICA expert for the Project for Human Resource Development of Technicians at the Hanoi University of Industry (HaUI) (secondary author) • Osaka prefectural government official (primary author)

Source: Drafted by the authors.

participated in the project: (i) Dong Nai University (DNU); (ii) Dong Nai Economic and Technical College (DNETC);[19] and (iii) Vocational Secondary School of Economics and Technology No. 2 (TCKTKT2).[20] These new partner education and training institutions were assessed and selected based on criteria which DIZA and Japanese experts developed together (see Table 7.10).

[19] DNETC became part of DCoHT during the Phase II project.

[20] DIZA also selected Dong Nai Technology University (DNTU) as a partner TVET institution, but the institution did not participate in project activities.

Table 7.10. Selection Criteria of New Partnering Institutions

#	Criteria	Indicators
1	Commitment of top management	Quick implementation of 3S and safety measures.
		Strong commitment to develop curricula and teaching materials by allocating sufficient number of lecturers.
		Strong commitment to develop 3S/safety experience room.
		Strong willingness to start 3S/safety activities on campus.
		Strong willingness to be involved in project management.
		Desire to accommodate Japanese companies' strict quality requests.
2	Sufficient students in relevant faculties	Reasonable number of new students in the faculties of mechanical engineering, electrical engineering, electric engineering in the past three years.
3	Reasonable training facilities and equipment	Availability of basic mechanical, electric, and electronic engineering training equipment.
4	Location	Reasonably close to DCoHT and LHU.
5	Willingness for mutual learning of local good practices	Eager to learn from DCoHT, LHU, and other TVET institutions; not always requesting technical guidance from Japanese experts.
6	Not spoiled by other ODA projects	No/less involvement in other ODA projects.
7	Neutrality	Not related to military activities.

Source: Drafted by the authors.

In Phase II of the project, the Vietnamese trainer team, consisting of DCoHT and LHU lecturers trained during Phase I, mainly guided lecturers from the three new partnering institutions. Japanese experts reckoned that the DCoHT and LHU trainers had already developed enough knowledge, confidence, and teaching tools through the Phase I project. Thus, rather than directly providing technical guidance, Japanese experts focused on assisting DCoHT and LHU lecturers to develop ToT programs for newly joined TVET institutions and design training sessions in Dong Nai and Japan. They also provided hands-on advice for DCoHT and LHU lecturers.

4.2.2.2. Achievements and challenges

The Phase II project delivered most of the target results, which included: (i) development and implementation of ToT programs for three new participating institutions; (ii) capacity development of trained trainers from DCoHT and LHU through a learning-by-doing process; (iii) development

Table 7.11. Main Results and Technical Cooperation of the Phase II Project

Item	Details
Main results	• The development and implementation of ToT programs at three new participating institutions. • The capacity of trained trainers from DCoHT and LHU was enhanced through a learning-by-doing process. • Three partnering institutions developed curricula for 5S and safety courses, with technical guidance from DCoHT and LHU. • DIZA organized Project Promotion Committee meetings with guidance from PREX and Japanese experts. • A plan for a future ToT center was drafted and the mechanism for financial sustainability was suggested.
Technical cooperation	• Training in Japan (two sessions): Visits to companies and public vocational training facilities and visits to and training at universities and technical colleges. • Provision of technical guidance in Dong Nai (three sessions): Provided technical guidance for developing the ToT programs, including trial lessons, curriculum development in new partnering institutions, design of safety experience rooms at new partnering institutions, and a plan to establish a ToT center.

Source: Drafted by the authors.

of curricula for 5S and safety courses at new partnering institutions, with technical guidance from DCoHT and LHU; (iv) development of DIZA's capacity to organize Project Promotion Committee meetings; and (v) a plan for the establishment of a ToT center and suggested financial sustainability mechanism (see Table 7.11).

The most important result was the development and implementation of the ToT program for 5S and safety at three new partnering institutions. DCoHT and LHU trainers jointly developed the program with technical guidance from Japanese experts. In delivering the program, the LHU team provided modules for 5S, while DCoHT taught safety training modules. This tangible asset contributed to further dissemination of project results.

During the activities outlined above, the Dong Nai MHRD Project faced challenges in leveling knowledge of participants, securing their commitment, and coordinating multiple stakeholders. Furthermore, the project activities were disrupted at the last stage in 2020 by the movement restriction due to COVID-19. This delayed the important process of synthesizing project results until 2022. These challenges are analyzed in the next section.

5. Findings of Field Study

5.1. Research objectives and method

The project results presented in the previous section indicate that the Vietnamese counterparts learned and adapted 5S, safety, and partnership development between TVET institutions and Japanese companies through the two phases of the project. They have also disseminated the results to other education and training institutions in Dong Nai province on their own initiative. However, in order to determine whether the translative adaptation process occurred as a result of the project, it is important to examine how the Vietnamese counterparts perceived the processes, challenges, and results. Therefore, field research interviews were conducted in Dong Nai province from December 5 to 12, 2019 in order to obtain qualitative data on their perceptions.

The interview questions mainly focused on: (i) changes or development which have taken place; (ii) results and effects of the project; and (iii) challenges in absorbing technical guidance from Japanese experts at the beginning and middle of the project implementation period. In particular, the interviews concentrated on two key project outputs; (i) the development of 5S and safety course curricula at two model TVET institutions; and (ii) the development of institutional mechanisms to promote partnerships between Japanese SMEs and partnering TVET institutions. The interviews targeted Vietnamese counterparts at DIZA, DCoHT, and LHU, as well as Japanese companies which have invested in Dong Nai province (see Table 7.12).

5.2. Counterpart perception of results

The interview data indicated that the Vietnamese counterparts perceived behavioral changes for the promotion of 5S and safety at model TVET institutions and benefits of scaling-up and disseminating project results.

5.2.1. Behavioral changes at model TVET institutions

Model TVET institution staff perceived changes in campus itself, lecturer attitudes about 5S and safety promotion, and recognition by industry. LHU lecturers stated that the campus became cleaner, and the number of accidents dropped after the project implementation. They also reported that graduates who took these courses were well-received at Japanese- and

Table 7.12. Profile of Interviewees

No	Pseudonym (Organization)	Number of Interviewees	Pseudonym (Interviewee)
1	Dong Nai Industrial Zone Authority (DIZA)	2	Director A, Manager A
2	Dong Nai College of High Technology (DCoHT)	2	Director A, Manager A
3	Lac Hon University (LHU)	4	Director A,Lecturer A, Lecturer B, Lecturer C
4	Vocational Secondary School of Economics and Technology No. 2 (TCKTKT2)	1	Lecturer A
5	Dong Nai Economic and Technical College (DNETC)	1	Lecturer A
	Vietnamese Counterparts*	10	
1	Large Japanese assembler	2	Manager A, Supervisor A
2	Japanese electronic parts supplier A	1	Senior Manager A
3	Japanese electronic parts supplier B	1	HR Manager A
4	Japanese mold and die manufacturer	1	Director A
	Japanese companies	5	
	Total Number of Interviewees	**15**	

Note: *The actual name of the organization was shown since it is obvious that this research focuses on these Vietnamese counterparts.
Source: Drafted by the authors.

foreign-affiliated companies and that more Japanese companies are visiting LHU. Another perceived result is the increasing number of new students as a result of PR about the project results. According to them, it is likely that students consider that employment opportunities will increase after taking the 5S and safety course.

LHU lecturers also mentioned that their senior leaders, lecturers, and students are increasingly aware of the benefit of promoting 5S and safety. For example, after robotic workshop students fully experienced the effects of 5S in terms of productivity improvement and accident reduction, they changed their attitude and started throwing away garbage on their own initiative. According to the lecturers, this caused spillover effects. While teachers not involved in the project initially did not show interest in the 5S promotion initiative, they eventually did so after observing

visible changes resulting from the project.[21] Manager A of DCoHT, who had industry work experience, presented the learning outcomes of the Dong Nai MHRD Project. When working at the company, she had only a superficial knowledge of 5S and safety. However, this project enabled her to obtain a deeper understanding of these subjects and helped brush up her knowledge.

5.2.2. Positive attitudes for scaling up 5S and safety courses

The interview data indicate both DCoHT and LHU plan to scale up the 5S and safety courses. According to LHU Director A has initially introduced the 5S and safety course in mechanical and electronic engineering faculties but will eventually expand it to all other faculties while continuing to improve the curriculum through discussion among lecturers. Finally, LHU plans to provide more 5S and safety training for firms, as it has started receiving such requests from Vietnamese firms. This indicates that they developed the confidence to disseminate the project results even to industry due the success of the in-service training provided in the Dong Nai MHRD Project. In fact, Director A of a Japanese mold and die manufacturer, whose employees received 5S training by DCoHT and LHU project members, reported that Vietnamese teachers provide training more effectively than Japanese staff. He also hopes that they can continuously provide technical guidance for their employees because they face challenges in maintaining 5S in their factory. Supervisor A of a large Japanese assembler suggested that TVET institutions provide more training on professional working behavior and discipline for their students, since they observed that many graduates quit jobs because they could not adapt to the workplace environment after enjoying a relaxed school life.

DCoHT Director A presented a plan to train 80 per cent of its teachers in order for them to be able to provide the 5S and safety course to all students. Furthermore, he said that, since the number of its students grew by 25 per cent in 2018 and 18 per cent in 2019, the college intends to ensure that all students take the 5S and safety course. Finally, he stated that, as it was pointed out that the productivity of vocational training schools in Vietnam was low, the school wants to overcome this weakness through offering this course. He expects that the course will also help students

[21] See Table 7.4 and Table 7.9 for the core project members.

make a better impression when they visit companies. This comment is also supported by an interviewed firm. Regarding the impact of the 5S and safety courses, Supervisor A of a large Japanese assembler which had worked with the two model institutions, stated that after the 5S and safety courses were implemented, the students it hired were well-disciplined and were more interested in learning about the company during study tours.

5.2.3. Effectiveness of the Project Promotion Committee

DIZA intends to continue the Dong Nai MHRD Project based on the current project design (as of 2019) and implement it at a wider range of schools, according to the interview data. In particular, DIZA regarded the Project Promotion Committee as an effective mechanism to determine industry skills needs in comparison with their past initiative which, while it involved Japanese and other foreign-invested enterprises, did not help them obtain useful information from those firms. This is basically consistent with model TVET institution perceptions. Interviewed LHU lecturers stated that the Program Promotion Committee provided a good opportunity to listen to firms' advice, even though they noted that, since member firms had not had sufficient time to observe the results at model TVET institutions, their comments on the 5S and safety courses had been limited.

Interviewed DIZA staff also reported that the top management of the Dong Nai provincial government gave high marks to the benefits from the Dong Nai MHRD Project due to its contribution to increasing the supply of skilled workers for industry. According to them, this helped them mobilize funding for the Phase II project from the provincial government. On the other hand, interviewed DIZA staff explained that in order to advance the project, it was necessary to attract more Japanese-affiliated SMEs and establish a manufacturing support base, such as the Monozukuri Business Information Center Osaka (MOBIO).[22]

[22] The Monozukuri Business Information Center Osaka (MOBIO) is Osaka Prefecture's manufacturing support base and was opened in Higashi-Osaka City in April 2011. It has a 200-booth permanent exhibition hall and industry-academia partnership offices, providing one-stop support to SMEs in Osaka Prefecture. See: MOBIO (2018).

5.3. Challenges and solutions faced by the Vietnamese counterparts

5.3.1. Issues and measures in the early stage of the project

According to the interview data, staff of two model institutions perceived the following three challenges: (i) uneven knowledge of 5S and safety among lecturers who were core project members; (ii) handling project assignments in addition to their regular work; and (iii) aligning expectations with Japanese experts.

5.3.1.1. Uneven knowledge among core project members

There were differences in the degree of understanding of 5S and safety among core project members, depending on their experience in industry. Senior leaders and some DCoHT lecturers were likely to understand the key points of 5S and safety taught by Japanese experts faster because they had industry experience or a certain level of knowledge about the subject gained prior to the Dong Nai MHRD Project. In contrast to DCoHT, most LHU lecturers did not have industry experience. Thus, it took time for them to understand key elements of 5S and safety, which are not academic knowledge but working knowledge developed at production sites. In order to overcome this challenge, LHU organized an internal class for its lecturers and held weekly study meetings where they shared knowledge.

5.3.1.2. Handling project assignment as extra work

Many model institution lecturers had to undertake project assignments on top of their regular teaching work. DCoHT Manager A mentioned that she and her colleague struggled with the need to handle this work in a limited amount of time, in addition to their regular jobs. They were concerned about being able to fully implement the project due to being overtasked without additional time allowance. She mentioned that they would have dropped out of the project if they were not continuously motivated by Japanese experts, who were enthusiastic about the project.

DIZA, the leading Vietnamese counterpart, also recognized this issue. DIZA Manager A reported that in the early stage of the Dong Nai MHRD Project, it was difficult to coordinate the schedules of core project members from two model TVET institutions. DIZA noted that these lecturers were rather hesitant to allocate significant time for project activities because they were not granted additional time for them on top of their original teaching work. Therefore, DIZA solved this issue through discussion with

senior leaders of those institutions.

5.3.1.3. Aligning expectations with Japanese experts

The core project members from DCoHT and LHU did not clearly understand what activities and tasks they were expected to take leadership with at the beginning of the project. Interviewed LHU lecturers said that in the beginning, they expected Japanese experts to provide a ready-made curriculum for the 5S and safety course which could be utilized immediately. According to the authors' observation, this was because of the perception gaps with Japanese experts who anticipated the Vietnamese counterparts would develop the curricula based on reference materials technical guidance they provided. This problem was solved when Japanese experts clearly explained their expectation that the Vietnamese counterparts should develop their own curricula, given that there is no stand-alone course for 5S in Japanese technical colleges or industrial high schools.

5.3.2. Challenges and countermeasures in the middle stage of the project

The interview data suggest that the Vietnamese counterparts had to overcome various challenges in developing and implementing the 5S and safety courses and scaling up the results in their institutions and beyond.

5.3.2.1. Adapting Japanese models for training program development and implementation

DCoHT and LHU faced challenges training their lecturers and determining industry skills needs for the development and implementation of the 5S and safety courses.

DCoHT Director A realized the necessity of adjusting the 5S and safety course curriculum based on local needs. However, he mentioned that it was a time-consuming and costly processes. Furthermore, he reported two more challenges. First, they had to work hard to change the mindset of lecturers through the ToT program. For example, it was challenging to develop the capacity of lecturers to provide KYT and risk assessment training. According to him, many Vietnamese did not feel that dropping a hammer was a problem if nobody was injured. Nonetheless, their lecturers should recognize that dropping a hammer itself is problematic when teaching KYT or risk assessment. DCoHT Director A also valued

the guidance provided by Japanese experts in Vietnam, saying that they introduced and demonstrated their philosophy toward work and then urged students to think about it. He also said that training process management (the PDCA model) and the provision of trial lessons helped them train their lecturers.[23] Interviewed LHU lecturers also said that it was difficult to explain to humanities course students how 5S and safety knowledge could be applied in daily life because they did not have manufacturing experience. To solve this issue, LHU lecturers introduced easy-to-follow examples of applying 5S and safety to the classroom and daily life (e.g., sorting out white board makers and return them to original positions). This increased the interest of students without engineering, science, or manufacturing backgrounds.

5.3.2.2. Scaling up pilot training courses within two model institutions

The two model institutions faced difficulty training other lecturers to expand the 5S and safety courses to faculties or departments of which they were not in charge.

In order to expand the 3S and 5S courses to the entire institution, the core project members, directly trained by Japanese experts, had to train other lecturers who had not yet participated in project activities. However, core staff members at both institutions reported difficulty motivating other lecturers because they did not share the same level of passion for the implementation of 5S and safety. LHU lecturer A expressed concern about whether lecturers who newly joined the project could provide students with the same level of knowledge and passion as the core project members had been doing. In order to solve this problem, LHU project members provided ad-hoc lectures for teaching staff in other faculties. Similarly, DCoHT Manager A reported that they attempted to train other lecturers based on their personalities and teaching styles. She also pointed out the advantage of providing training in Vietnamese, referring to the difficulty in receiving training in Japanese with interpreters who often did not know technical terms.[24]

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[23] The training process management system consists of seven main steps: (i) determination of industry skills demand; (ii) selection of training fields; (iii) development of curricula; (iv) preparation for training program delivery; (v) implementation of training programs; (vi) evaluation of training programs; and (vii) formulation and implementation of action plans (see Figure 1.1 of Chapter 1 and Chapter 3).

[24] The problem caused by insufficient quality interpretation is a possible drawback of technical cooperation provided through short-term missions of foreign experts. This may be less likely for a project to which resident long-term foreign experts and national

Considering the Japanese experts' view that the 5S and safety courses will only be sustained if they are implemented across entire institutions, both DCoHT and LHU have been trying to promote 5S on campus beyond the regular training courses. However, interview data suggest that the progress has been faster at DCoHT than LHU due to the strong commitment and leadership of top management. DCoHT Director A stated that, based on his belief in equal education, he was willing to provide the 5S and safety courses to all students from the beginning of the project. He explained that 5S had become an initiative of the entire institution. DCoHT is collecting student suggestions for 5S implementation while posting the results of activities on its website so that all students can follow the progress. On the other hand, LHU has not yet reached the point where students practice 5S on a daily basis beyond the faculties of mechanical and electronic engineering, where the core project members are working. In order to overcome this challenge, interviewed LHU lectures reported that they have been attempting to change student mindsets through company visits and internships which enable students to learn how firms implement 5S. In addition, they suggested that they try to maintain 5S in classrooms and workshops by implementing periodic on-site checking.

5.3.2.3. Developing and maintaining the institutional mechanism for engaging industry

DIZA regards the Project Promotion Committee as a useful option to engage industry (see Section 5.2.3). At the same time, they expressed concerns about its sustainability, observing the case that a director of a Japanese company, who served as a member of the committee, returned to Japan when his term finished. Therefore, interviewed DIZA staff expressed their intension to encourage other Japanese companies to join the Program Promotion Committee, taking advantage of various occasions to meet them.

The two model TVET institutions have also indicated that it is challenging to determine local industry skills needs for curriculum development through Project Promotion Committee meetings. DCoHT Director A reported that many firms do not have enough time to inform TVET institutions of their needs, either through face-to-face meetings, including the Program Promotion Committee meetings, or surveys.[25]

coordinators are attached, such as the HaUI-JICA Project (see Chapter 3).

[25] This is a typical problem which government and TVET institutions face when they try to

On the other hand, it is likely that industry believes that their feedback is not fully utilized by TVET institutions. Although his comment is not about the project activities, HR Manager A of Japanese electronic parts supplier B reported that they received little feedback on their actions after companies conveyed their opinions at the LHU and Dong Nai University (DNU) advisory committee meetings. Moreover, even if companies contacted universities about employment and related matters, the responses provided by these universities were insufficient. This implies that perception gaps and mistrust remain issues to be solved (also see Mori and Stroud 2022).

5.4. Summary of findings

The interview data show that the strong leadership of the two model TVET institutions enabled them to deliver the intended project results, in particular the development and implementation of the 5S and safety courses. Both model TVET institutions recognized the benefits of developing the 5S and safety course curriculum and teaching materials based on local economic or cultural contexts rather than importing these from Japan. Moreover, such recognition led them to understand the benefits of core project members continuing to train other lecturers through the ToT programs.

These institutions have been expanding the 5S and safety courses across their campuses with strong support from top management. As a result, all students take the 5S and safety courses. LHU has been also extending the 5S and safety course to all departments, but this has only happened when lecturers who have participated in the project activities together with Japanese experts, convinced their top management to implement it. This means that DCoHT has been implementing and scaling up project activities using a top-down approach, while LHU has been doing so but using a bottom-up approach.

Furthermore, the institutions have been overcoming challenges by promoting self-learning in the early and middle stages of the project, influenced by Japanese experts' passion but not solely relying on their guidance. The original project members have absorbed knowledge of new subjects, taking advantage of continuous encouragement from Japanese

adopt the supply-side approach. See Mori (2019).

experts and support from DIZA, despite the challenge in undertaking project assignments on the top of their regular teaching work. They have also been transferring their knowledge and teaching skills to other lectures through the ToT programs, which were developed taking into account the personalities of those lecturers and offered in Vietnamese. This means that ToT, or mutual learning, has functioned to promote adaptation of the Japanese model, although the DCoHT and LHU lecturers indicated the difficulty in transferring not only technology but passion for the subjects. The effect of self-learning was also found at HaUI (see Chapter 3).

Finally, DIZA faced the difficultly of adapting the institutional mechanism to develop partnerships between TVET institutions and Japanese SMEs, although the project has helped them develop their coordination capacity to a certain extent. This implies that it takes time to develop and maintain the institutional mechanism for industry engagement in TVET.

6. Discussion: Key Elements of the Translative Adaptation Process

This section examines the project activities and delivery modes in reference to the framework developed based on translative adaptation, knowledge creation, and import replacement (see Section 2).

6.1. Difference in adaptation among the Vietnamese counterparts

Key activities and delivery modes of the project are mapped by each process of translative adaptation and the SECI model of knowledge creation in Table 7.13. This indicates that the two model TVET institutions went through each process with more systematic training and technical guidance than DIZA.

Table 7.13. Translative Adaptation and Knowledge Creation Processes at Two Model TVET Institutions and DIZA

Translative adaptation	Knowledge creation	Two Model TVET institutions (DCoHT and LHU)	DIZA
Learning stage	• Clarification of target tacit knowledge	■ Key output clarified mainly through field interviews by Japanese experts and DIZA • Theme: Introduction of 5S and safety as well as the teaching methods of Japanese technical colleges and industrial schools ■ Training in Japan • Learned teaching methods of technical colleges and industrial high schools • Learned safety training at companies • Learned about 5S and basic production management methods from a university and companies that practice them and consultants, etc.	■ Key output clarified mainly through field interviews by Japanese experts and DIZA • Theme: Development of DIZA's capacity to facilitate partnerships between TVET institutions and Japanese SMEs ■ Field interviews with Japanese companies and technical guidance from Japanese experts • Learned methodologies to grasp needs such as interviews with local Japanese companies and surveys ■ Training in Japan/technical guidance form Japanese experts in Vietnam • Learned project management methods • Learned the overview of an institutional mechanism in Japan
Adaptation / Internalization stage	Socialization	■ Training in Japan • Absorbed what they learned and clarified questions and points for further learning through wrap-up sessions • Developed the preliminary curriculum outlines and the outline of textbooks based through workshops with technical guidance form Japanese experts • Developed a detailed work plan to prepare and implement the 5S and safety courses • Developed textbook outlines	■ On-the-job training by Japanese experts • Held interviews with Japanese companies • Designed and conducted surveys of Japanese companies ■ On-the-job training through organizing training in Japan/ technical guidance from Japanese experts in Vietnam • Learned project planning and management (progress monitoring, fund management, etc.) • Handled administrative jobs mainly based on the request from PREX • Administered coordination between companies and model TVET institutions for visits to companies and internships as needed

Translative adaptation	Knowledge creation	Two Model TVET institutions (DCoHT and LHU)	DIZA
Adaptation / Internalization stage	Socialization		・ Established the Project Promotion Committee (selecting committee members, inviting them, and administering the committee)
	Externalization	■ Workshops and meetings with Japanese experts in Vietnam ・ Refined and finalized curricula, textbooks, and tools/equipment. Healthy competition between two institutions promoted creativity ・ Developed ToT programs for lecturers in charge of 5S and safety	■ Training in Japan/technical guidance form Japanese experts in Vietnam ・ Developed the operation manual of the Project Promotion Committee ・ Developed the job flow for coordinating visits to companies and internships (development of forms, etc.)
	Combination	■ Activities led by model TVET institutions ・ Organized trial lessons with guidance from Japanese experts ・ Convened the Project Promotion Committee (opportunities to hear external opinions and make presentations to external parties) ・ Integrated 5S and safety courses as regular training programs ・ Conducted School-wide 5S activities	■ No particular initiative led by DIZA ・ Probably because there was no conversion of tacit knowledge to explicit knowledge, such as the conversion of the manual and job flows to official documents of the authority in the process of externalization
	Internalization	■ Activities led by model TVET institutions ・ Implemented internal ToT programs and other ad-hoc lectures and meetings with other lecturers ・ LHU: Implemented the course in the mechanical and electronic engineering faculties ・ DCoHT: Implemented the course for all first-year students	■ Activity led by DIZA ・ Developed the Phase II project which aimed to apply the results of the Phase I project to other TVET institutions in the province and obtained approval and funding from the provincial government

Translative adaptation	Knowledge creation	Two Model TVET institutions (DCoHT and LHU)	DIZA
Scaling-up stage		■ Disseminating project results outside the institutions ・ Provided ToT and technical guidance for three new partnering institutions in Phase II → Assist new institutions in going through the same processes as the ones model institutions experienced ・ Provided in-service 5S and safety training for Vietnamese employees of Japanese companies	■ Disseminating project results to new partnering institutions ・ Administered project planning, budgeting, and budget execution of the Phase II project

Source: Drafted by the authors.

6.1.1. Adaptation and the knowledge creation process for two model TVET institutions

In the learning stage, the two model TVET institutions had a chance to acquire not only explicit knowledge through formal training programs on 5S and safety but also tacit knowledge through the learning and teaching methods of Japanese technical colleges and visiting the safety experience facilities of Japanese companies. Furthermore, they organized self-learning opportunities, such as internal knowledge-sharing meetings.

They moved to the socialization process through developing the 5S and safety course curricula by synthesizing fragmented knowledge with technical guidance from Japanese experts. The interview data also suggested that they have absorbed Japanese experts' passion for the subject.

As a next step, the two model TVET institutions externalized what they learned as teaching materials, teaching methods, and equipment in safety experience rooms. They were customized, considering the capacity, knowledge and characteristics of lecturers and students as well as the availability of materials and tools in local markets. In this step, Japanese experts encouraged the leadership and creativity of the Vietnamese counterparts, providing technical guidance as needed. In addition, as

mentioned in Section 4.2.1, healthy competition between two institutions accelerated the adaptation of Japanese models.

In the process of combination, the two institutions converted what they learned to the internal ToT programs, including trial lessons, based on the curricula they developed. They developed a strategy to scale the pilot courses to all departments and promote 5S activities on campus. At this stage, Japanese experts limited their intervention to advice on critical issues only.

Finally, in the process of internalization, the two model institutions implemented internal ToT programs and the 5S and safety courses. They have also started expanding it to the entire institutions beyond pilot faculties. Furthermore, in the Phase II project, they have started transferring their knowledge to other TVET institutions through external ToT programs. Technical guidance from Japanese experts focused on quality assurance and strategic issues, while relying on the two schools to figure out the details.

6.1.2. Adaptation and the knowledge creation process for DIZA

DIZA has also been through a socialization and externalization process. They have learned project management and institutional mechanisms for facilitating partnerships between TVET institutions and Japanese companies. They also developed the operation manual of the Project Promotion Committee and the job flow for coordinating company visits by partnering TVET institutions and internships. Technical cooperation was delivered for these activities mainly through on-the-job training rather than formal training.

However, the research did not identify specific activities and products for the combination and internalization processes. DIZA has played a leading role in organizing the Project Promotion Committee and responded to some requests from partnering TVET institutions. Nonetheless, they have not yet adapted the 'consortium' model for economic, social, or institutional contexts of Dong Nai province (see Section 4.1.2). As a result, they have not yet created official government documents with the manual and job flows, while the two model TVET institutions managed to make the 5S and safety courses part of their regular training programs. This partly explains why the feedback provided by the model TVET institutions indicates that

the functions of the Project Promotion Committee need improvement. It should be highlighted that DIZA led the formulation of the Phase II project which enabled the Dong Nai MHRD Project to disseminate the results to other TVET institutions, mobilizing the funds from the Dong Nai provincial government. This is a key achievement. On the other hand, their capacity to facilitate partnerships between Japanese SMEs and TVET institutions basically remain the same as during the Phase I project, even though they have started demonstrating stronger leadership in organizing the Project Promotion Committee meetings.

This absence of adaptation or internalization is likely to be caused by noncompletion of externalization and combination processes, can be attributed to the following. First, the key output for DIZA, the development of an institutional mechanism to facilitate partnerships between TVET institutions and Japanese companies, was neither sufficiently broken down to sub-outputs nor explained in a form of a roadmap showing the functions to be developed in the short- and medium term. This is contrast with the model TVET institutions, which have developed detailed project workplans, following the key steps of training process management which consists of the development of curriculum, teaching materials, lecturers' capacity, trial lessons, course implementation, evaluation, and an action plan. In other words, DIZA did not form a concrete vision or roadmap with a list of sub-outputs to help develop its capacity as an agency to facilitate partnerships between TVET institutions and Japanese companies.

Second, DIZA was burdened by the administrative work of project management, including overall project progress monitoring and coordination with two model TVET institutions and Japanese companies. This on-the-job training contributed to DIZA's project formulation and management capacity, which led to the development of the Phase II project. However, DIZA did not have sufficient opportunities to deeply understand the details of institutional mechanisms for industry engagement in TVET and the roles of public organizations. As a result, DIZA could not gain thorough tacit knowledge of the socialization process. This made it difficult for them to go through the externalization and combination processes to the fullest, even though they internalized the project management and formulation knowledge.

Finally, they did not have a knowledge sharing partner in Dong Nai

province unlike the two model TVET institutions that learned mutually. Their knowledge sharing partner was the Japanese experts with whom they could not interact regularly or in their native language.

In short, the degree of adaptation depends on whether the Vietnamese counterparts have completed the knowledge creation process. To achieve this, the research findings suggest that sub-outputs or products and the mid-term vision should be clearly shared among project implementation partners in the early stage, although they can be adjusted in the process of project implementation. Furthermore, the combination of formal and informal learning as well as mutual learning among local partners helps promote adaptation. In particular, mutual learning opportunities are important for projects that have no resident foreign expert.

6.2. Importance of improvisation for knowledge creation

The above discussion indicates the importance of digesting and modifying foreign models in local contexts to complete the externalization and combination processes of knowledge creation, or adaptation. By completing these processes, the two model TVET institutions were able to convert tacit knowledge to explicit knowledge that can be transferred to other stakeholders. It is presumed that technical cooperation in the hands-on approach is required to support these processes, which highly depend on local contexts.

The previous section found that creative modifications, or improvisation in reference to the import reference model (Jacobs 1984), promoted externalization and combination processes at the two model TVET institutions. The research found the following improvisation episodes in the Dong Nai MHRD Project. First, the two model TVET institutions decided to develop stand-alone courses for 5S, which do not exist even in Japanese technical colleges or industrial high schools. Second, lecturers at those institutions developed teaching materials and tools for the 5S and safety courses, such as a handout for the 5S LEGO game, reusable worksheets for risk assessment exercises, and hand-made equipment for the safety experience rooms (see Section 4.2.1). Healthy competition between the two institutions promoted this incremental innovation. Finally, they developed ToT programs through which trained Vietnamese trainers transfer their knowledge of 5S and safety, teaching skills, and teaching materials that include sufficient local examples to other

Vietnamese lecturers.

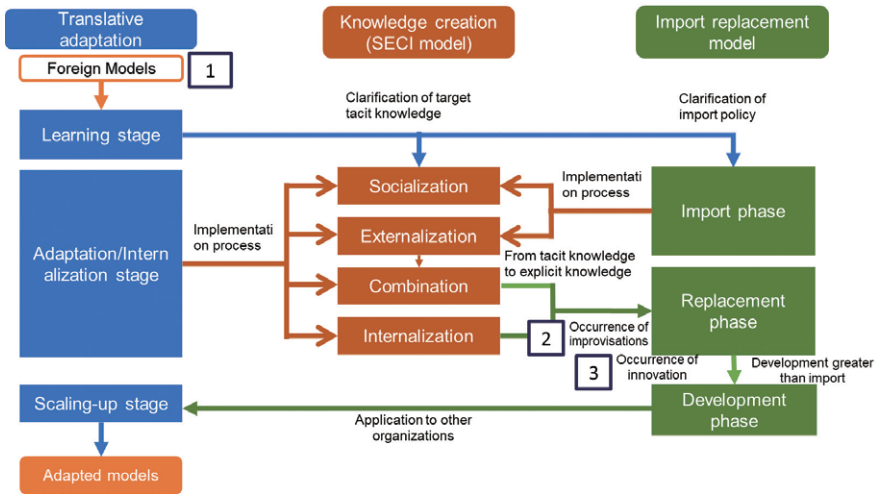
The research findings identified three key elements for promoting improvisation. First, it is important to keep space for counterparts to demonstrate their improvisation or creativity while maintaining a shared vision for project objectives. To achieve this, donors and foreign experts have to be flexible and open to new ideas, as is also discussed in Chapter 5. Furthermore, foreign experts need to keep modifying their intervention strategies, gradually stepping back from direct intervention, as done by this project's Japanese experts. Second, the confidence that comes from successful experience promotes improvisation. For example, the two model TVET institutions acquired the confidence to keep improvising measures to improve the 5S and safety courses, receiving positive feedback on the courses from senior institutional leaders, the provincial government, and Japanese companies.

During an interview, LHU Lecturer A, who had recently visited Finland for training, presented his idea for carrying out safety activities by leveraging the advantages of Japanese and Finnish teaching methods in the future. The importance of accumulating small successes is also linked to the discussion in Chapter 3. Finally, innovation through improvisation can be either incremental or pathbreaking. In this case, the two model TVET institutions improvised measures for incremental innovation, which led to scaling-up of the project results. Ensuring the above elements will facilitate translative adaptation in development cooperation projects.

7. Conclusion

This chapter examined the translative adaptation process of the Dong Nai MHRD Project, which was implemented as a development cooperation project led by local stakeholders of Dong Nai province and the Kansai Region of Japan. The project developed and implemented 5S and safety courses and strengthened partnerships with Japanese SMEs which constitute local supporting industries, absorbing experience and knowledge accumulated in Japan through training and technical guidance provided by experts.

The research findings suggest that the following three elements are imperative for translative adaptation, in reference to three theoretical models, namely the translative adaptation process presented in Chapter



Source: Drafted by the authors based on Jacobs (1984); Nonaka and Hirose-Nishihara (2018); Ohno (2024).

Figure 7.2. Relationship of Translative Adaptation, SECI, and Import Replacement Model

2, the SECI model for knowledge creation (Nonaka and Hirose-Nishihara 2018; see also Table 7.1), and import replacement theory (Jacobs 1984) (see Figure 7.2).

First, it is necessary to clarify the specific knowledge (tacit or explicit knowledge) to target 'adaptation' or 'internalization' through policy learning. This is the starting point of the translative adaptation model, as well as the other two models. Targets should be sufficiently broken down to sub-outputs or products supported by a development roadmap, such as how the two model TVET institutions learned about 5S and safety, training process management, and the passion of Japanese experts in the project. Second, the key to 'combination' and 'internalization' of the SECI model is whether 'improvisations' in the replacement phase of the import replacement model occur or not. 'Improvisations' will take place only if counterparts have initiated the process of converting tacit knowledge to explicit knowledge by going through the socialization and externalization of the SECI model.

In this project, the two model TVET institutions improved their teaching materials, training equipment and tools, and teaching methods, taking into

account the characteristics of lecturers and students and incorporating local cases. Finally, when innovations are brought about in the development phase of the import replacement model, dissemination and scaling-up will happen in the translative adaptation process. Innovations can be either incremental or pathbreaking, as shown by how the two model TVET institutions developed the ToT programs, utilizing teaching materials and equipment as well as teaching methods customized in consideration with local contexts.

The inclusion of the above elements will promote translative adaptation in development cooperation projects. Furthermore, the research provides an important implication for the cooperation approach. A hands-on approach may contribute to translative adaptation by counterparts of ODA projects. However, the research findings indicate that the hands-on approach should continuously change based on each stage of translative adaptation. In case of the Dong Nai MHRD Project, Japanese experts provided detailed technical advice in the learning stages but focused on encouraging their Vietnamese counterparts to take the initiative in the adaptation stage, gradually stepping back from intervention in detail. In addition, healthy competition or mutual learning between the two model institutions and self-leaning by respective institutions accelerated improvisation, which is a key factor for promoting translative adaptation. This was particularly helpful for the project, which could not afford to dispatch residence experts in Vietnam (see Chapter 5 for a similar case).

Finally, we found that, even though the project successfully shifted to the scaling-up stage, this does not necessarily mean that all outputs or counterparts achieved translative adaptation. A lesson learnt is the importance of ensuring that all key counterparts complete the knowledge creation process depicted by the SECI model, given that counterparts may need longer time to complete the processes for the development of public institutions than the development of training programs.

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