Policy Paper

Promoting Tripartite Partnerships to Tackle Skills Mismatch:

Innovative Skills Development Strategies to Accelerate Vietnam's Industrialization

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Japan International Cooperation Agency
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Abbreviations

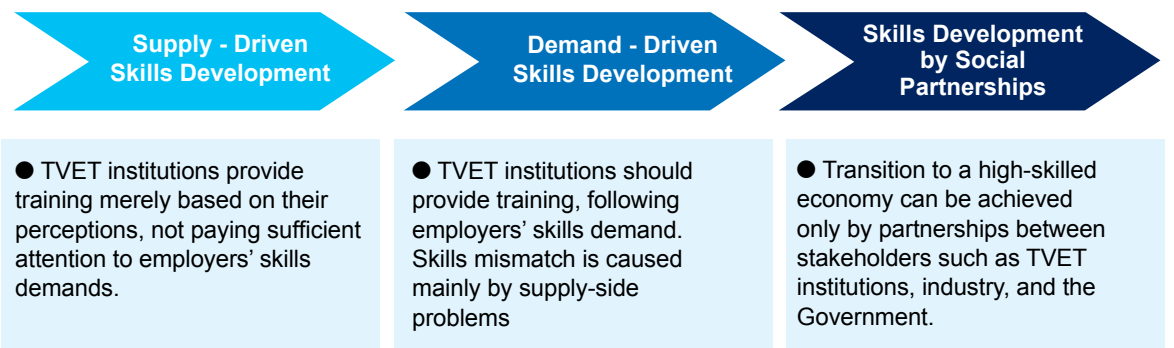
ASEAN	Association of Southeast Asian Nations
FDI	Foreign Direct Investment
GDVT	General Directorate of Vocational Training
HaUI	Hanoi University of Industry
HCMCVC	Ho Chi Minh City Vocational College
HIC	Hanoi Industrial College
HIVC	Hanoi Industrial Vocational College
HPIVC	Hai Phong Industrial Vocational College
HRDF	Human Resource Development Fund
IUH	Industrial University of Ho Chi Minh City
JAVADA	Japan Vocational Ability Development Association
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
MNCs	Multinational Corporations
PDCA	Plan, Do, Check, Action
PIC	Peripheral Interface Controller
PLC	Programmable Logic Control
QC	Quality Control
SMEs	Small and Medium Enterprises
TOT	Training of Trainers
TTC	Technique and Technology College
TVET	Technical and Vocational Education and Training
VJC	Vietnam Japan Center

Executive Summary

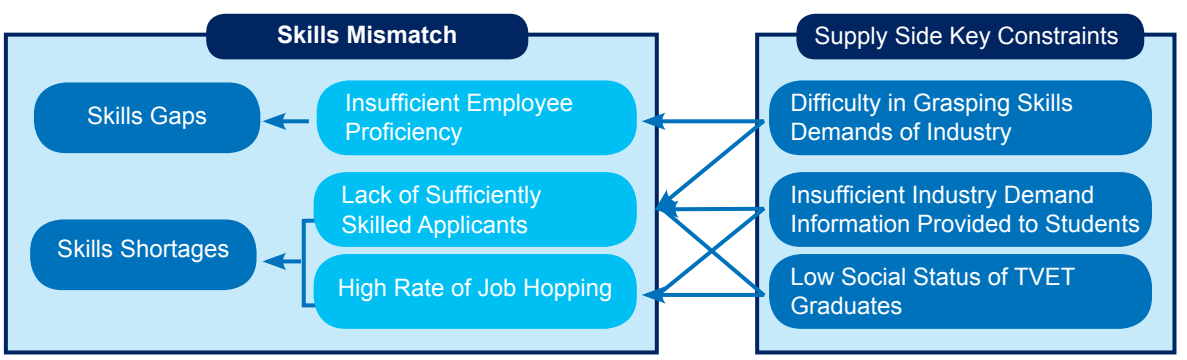
Vietnam has achieved rapid economic growth since the Doi Moi reforms in the 1990s, having taken advantage of increasing foreign direct investment (FDI). In order to go forward to the next step of industrialization, Vietnam requires high-skilled industrial human resources, namely *monozukuri* human resources, who can improve product quality and production operations.

Realizing the needs of high-skilled industrial human resources, the Government of Vietnam has been issuing various policies and implementing projects. However, it appears that the supply of those human resources have not caught up with the demands. In particular, the lack of competent technicians is an immediate concern, considering that Vietnam is aiming to step up to the next stage of industrialization which requires more value added processes with stronger supporting industries.

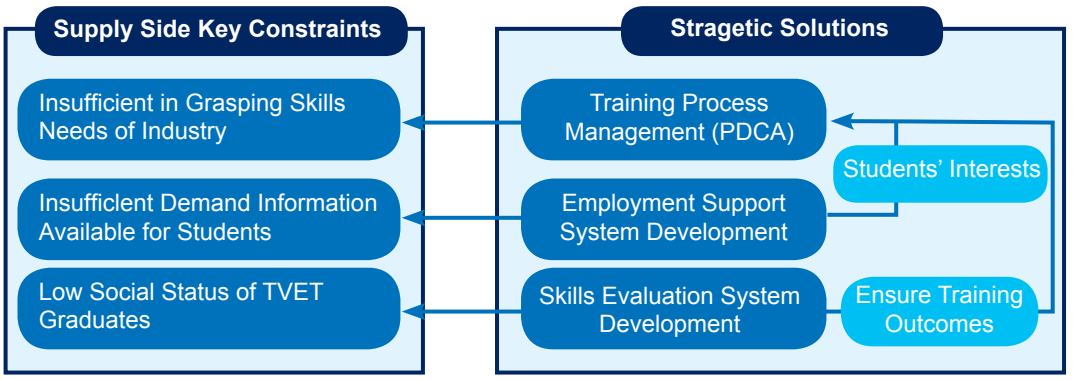
In order to reduce **the mismatch of skills demands and supply** at the technician level, some technical and vocational education and training (TVET) institutions and their supervisory ministries are becoming more aware of the necessity to improve training programs based on industry skills demands. However, this demand-driven training concept has not materialized yet. This is not only because TVET institutions do not have enough capacity. Indeed, TVET institutions should make their efforts to improve training programs based on the needs of industry, but they need supports from industry and the Government. **In order to become a high-skilled economy, it is necessary to formulate social partnerships between stakeholders consisting of TVET institutions, industry, and the Government**. This policy paper aims to analyze the constraints which TVET institutions face and identify concrete actions needed in stakeholder partnerships, in order to promote skills development and accelerate industrialization in Vietnam.



Among the various causes of the imbalance between skills demands and supply, this policy paper focuses on three key constraints which TVET institutions and their students face in Vietnam. The first issue is **the difficulty in determining the skills needs of industry**. The lack of detailed information on specific skills needs at the occupation level and the dynamic changes in skills demands make it hard for TVET institutions to grasp the demands of industry when it comes to skilled workers. The second issue is **insufficient industry skills demand information provided to students**. TVET students do not have enough information and opportunities to understand the exact skills industrial sectors require before they apply for internships and jobs. Third, **the low social status of TVET graduates and technicians** discourages young people from joining TVET programs. Even if they realize that industry needs more technicians, TVET programs often remain a last resort for them.



In order to reduce the above supply side constraints, the Japan International Cooperation Agency (JICA) has been promoting three strategic solutions through pilot projects and policy advising in Vietnam.



The first solution is a **training process management system**, which consists of the **PDCA** (Plan, Do, Check, Action) cycle of training program development and implementation. It helps TVET institutions understand and analyze the skills demands of industry in a proactive way. In addition, direct conversations with enterprises also give TVET institutions a chance to explore future or latent skills needs of industry. Second, the development of an **employment support system** should assist students in finding suitable jobs by providing practical information on business trends, enterprises, and skills needs. Furthermore, this system will enable TVET institutions to understand students' interests in skills and careers. With this information, TVET institutions can formulate realistic organizational strategies, considering both students' career interests and the needs of industry. Finally, the development of a **skills evaluation system** will contribute to improving the status of TVET graduates and technicians in enterprises and society. These solutions will contribute to the reduction of skills mismatch and help TVET institutions develop partnerships with industry.

JICA has been assisting Vietnamese counterparts in introducing the above three strategic solutions for this skills mismatch. However, they have only been applied in a limited number of TVET institutions, due to various constraints. **In order to further promote these solutions, tripartite partnerships between industry, TVET institutions, and the government are required.**

On the other hand, there may be a risk that the tripartite partnerships might become deadlocked if nobody is leading activities. Thus, we propose the following entities take leadership in activities for further promotion of the three solutions:

- **Training process management by leadership of TVET institutions**:

  While enterprises and the Government should definitely play their parts, the implementation of training programs is eventually TVET institutions' responsibility.

- **Employment support system by co-leadership of TVET institutions and enterprises**:

  TVET institutions are responsible to assist their students in obtaining a suitable job. On the other hand, the recruitment of competent technicians should be the most immediate concern of enterprises regarding skills development.

- **Skill evaluation system by leadership of the Government**:

  The Government should have ultimate responsibility for developing and implementing national skills tests, since it is about a national system development.

High-priority targets and corresponding actions are listed by the three solutions as follows.

Training Process Management

Two key targets are proposed for further application of training process management and actions to achieve them. **First and most importantly, interaction between TVET institutions and enterprises should be enhanced**, because this will enable TVET institutions to not only determine industry skills demands but also create the foundation for implementing the other two solutions. To achieve this target;

- TVET institutions should develop a fair evaluation system of lecturers, who should actively explore partnerships with industry, and provide appropriate incentives. Enterprises should keep communication channels with TVET institutions open.
- The Government should increase opportunities to nurture partnerships between TVET institutions and enterprises to discuss appropriate training programs.

Second, **dynamic training program development should be promoted**. Even if TVET institutions manage to collect information regarding skills demands, many of them lack the capacity to revise or develop training programs at this moment. TVET institutions need to find the way to reflect current and latent skill demands in their training programs on a timely and flexible basis. To achieve this target;

- TVET institutions should improve training curricula by utilizing their current discretion to the fullest.
- Enterprises should actively transmit information regarding skills needs, in particular their interests in employee training courses, to TVET institutions.
- The Government should assist TVET institutions to improve training programs in a timely fashion by strengthening TVET institutions' capacity to improve training programs.

Employment Support System

Toward the employment support system, **the first target is to provide sufficient and accurate information on job opportunities for students**. This is because currently few TVET institutions are able to provide students with basic information related to job opportunities and career paths. To achieve this target;

- TVET institutions should establish a career support section with sufficient manpower. Enterprises should provide job vacancy information with more accurate descriptions of required skills and knowledge.
- The Government should start formulating policies to urge lecturers to provide active career counseling for students.

Second, **the quality of internship programs should be improved**, because a mechanism to assure the quality of internship programs has not been developed in most TVET institutions. To achieve this target;

- TVET institutions should improve the procedures for formulating, implementing, monitoring, and evaluating internship programs.
- Enterprises should devise mutually beneficial internship programs in close cooperation with TVET institutions.
- The Government should analyze what constraints enterprises, TVET institutions, and students are facing in current internship programs and identify the ways to expand effective internship programs.

Skills Evaluation System

Regarding improvement of the skills evaluation system, we propose two key targets and the following actions to achieve them. First, **the credibility and social recognition of skills tests should be improved**, because limited numbers of enterprises recognize benefits of national skills tests at this moment. To achieve this target;

- TVET Institutions should carefully analyze the skills applied in industry when they develop skills standards and skills tests.
- Enterprises should actively participate in the process of skills test development.
- The Government should encourage enterprises to not only participate in skills tests but also to be involved in their development process by conducting various awareness raising activities.

Second, **skills tests should be expanded in a strategic and sustainable manner**. This will enable employers and employees to plan when and where they will be able to take skills tests. To achieve this target;

- TVET institutions should develop the capacity of lecturers who work as skills test assessors.
- Enterprises should consider sending their employees to skills tests regularly and continuously, as part of their internal skills development programs.
- The Government should make a realistic roadmap for the development of a sustainable management and financial mechanism for conducting reliable skills tests nationwide on a regular basis.

Monitoring the Results

In order to review the progress to implement actions, monitoring indicators are needed. It is difficult to find a perfect indicator to measure the above effects, but we propose the following proxy indicators: (i) the employment rate of TVET graduates; and (ii) skills shortages and skills gap indicators. **As an immediate action, TVET institutions should start measuring the employment rate in cooperation with enterprises as soon as possible**. Then, it is recommended that the Government consider developing mechanisms to measure more sophisticated indicators such as skills shortages and skills gaps.

Reduction of the skills mismatch is becoming more crucial for further industrialization in Vietnam. More TVET institutions are becoming aware of this issue and have begun realizing the importance of meeting industry's skills demands. However, they need support from industry and the Government in order to materialize the "demand-driven" training concept. **Skills mismatch**

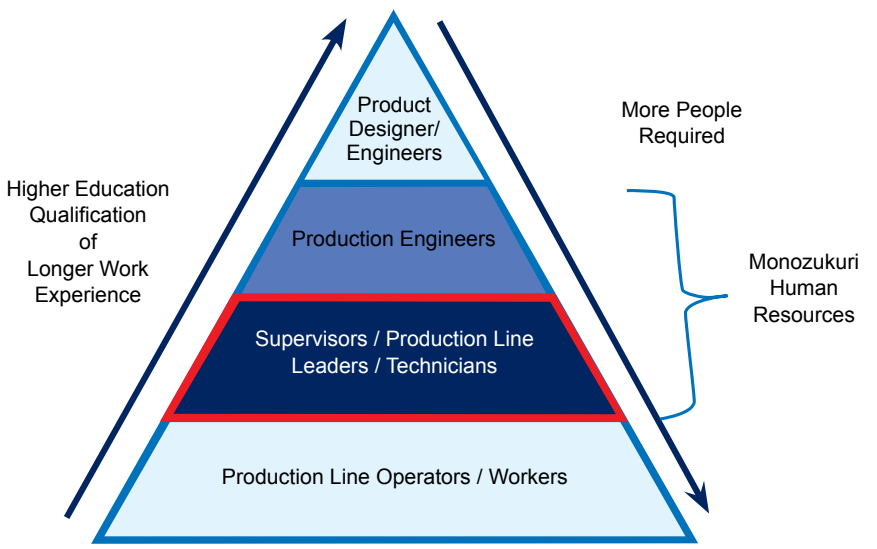
can be reduced only through tripartite partnerships between TVET institutions, industry, and the Government, which should aim to not only improve the supply-side capacity but also make information on skills demands more tangible and usable for the supply side. In addition, this partnership should be extended not only in the areas around large cities but also to various provinces which are recentury receiving more FDI. This will contribute substantially to the further industrialization in Vietnam.

1. Skills Development Toward the Next Stage of Industrialization

Vietnam has achieved rapid economic growth since the Doi Moi reforms in the 1990s, having taken advantage of increasing foreign direct investment (FDI). In particular, FDI has contributed to the development of the manufacturing industry, which has enabled Vietnam to begin the transformation from an agriculture-based economy to an industrialized country.

However, most FDI enterprises have been attracted to Vietnam by the abundance of good and low-wage production-line workers and have mainly focused on lower value-added processes. In order to go forward to the next step of industrialization with higher value-added manufacturing processes, **Vietnam requires high-skilled industrial human resources such as skilled technicians, production-line leaders, and production engineers, namely *monozukuri* human resources[1] , who can improve product quality and production operations** (see Figure 1). Such human resources are needed, not only for foreign subsidiaries that receive direct technology transfer through FDI, but also for local companies which aim to be integrated into the supply chain of multinational corporations (MNCs) or need to acquire more market share in the domestic market.

Figure 1. Structure of Industrial Human Resources



Source: Mori (2013)

Being more aware of the needs of high-skilled industrial human resources, the Government of Vietnam has been issuing various policies and implementing projects for skills development with assistances from foreign aid organizations. However, it appears that the supply of human resources have not caught up with the demand[2]. In particular, the lack of competent technicians is an immediate concern, considering that Vietnam is aiming to move up to the next stage of industrialization which requires more value added processes with stronger supporting industries[3].

In order to reduce the mismatch of skills demands and supply at the technician level, the supply side, namely technical and vocational education and training (TVET) institutions and their supervisory ministries, should learn what kind of skills industry requires. Gradually, the Government and TVET institutions have been paying more attention to industry needs, along with recommendations made by some domestic research institutes and foreign aid organizations.

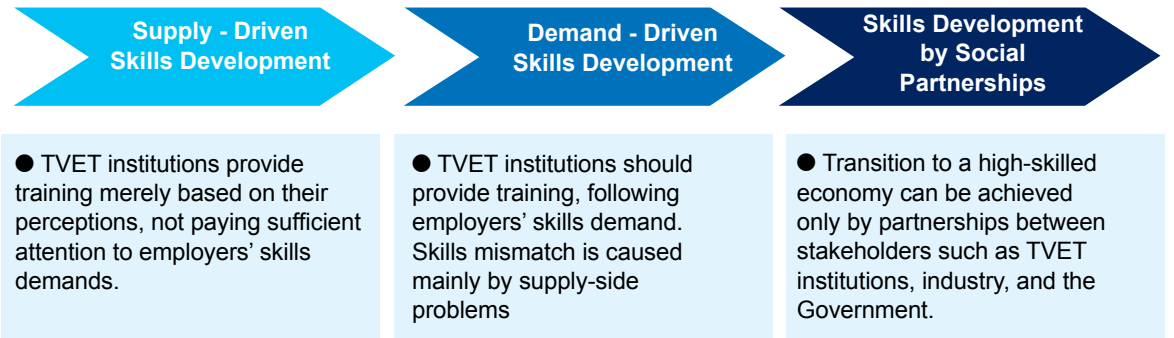
However, the above demand-driven training concept has not materialized yet. This is not only because TVET institutions do not have enough capacity, but also because they cannot solve all the issues alone. The kind of constraints TVET

1. Monozukuri is a Japanese word which literally means “making things,” but it implies manufacturing for the primary purpose of achieving customer satisfaction through high quality in the spirit of a proud and dedicated artisan, rather than just making profits (Ohno 2009).
2. According to a survey conducted by the World Bank, more than 80% of responding employers reported that job applicants for the position of professionals and technicians lack skills required for the jobs (World Bank 2013).
3. According to the survey conducted by JICA with more than 100 Japanese enterprises, 80% of respondents replied that they currently need technicians and 89% replied they will need technicians in the future (JICA 2014). In the medium and long term, Vietnam will certainly need more competent engineers as well as technicians, in order to become a high income country. See Ohno (2009) for discussion on the stage of Vietnam’s industrialization.

institutions face in achieving the demand-driven training concept and what sorts of supports they need from industry and the Government have not been sufficiently analyzed.

In order to achieve a higher skilled economy, it is necessary to formulate social partnerships between stakeholders (see Figure 2). Certainly, TVET institutions should continue to make more efforts to improve their training programs based on industry needs, but industry should also provide support for them. The Government needs to facilitate their partnerships and stimulate demands for high skills.

Figure 2. Paradigm Shift for Skills Development



In this context, this policy paper aims to analyze the constraints which TVET institutions face and identifying concrete actions needed in stakeholder partnerships, in order to promote skills development and accelerate industrialization in Vietnam. The following section discusses the key constraints to increasing the supply of skilled technicians. Section 3 examines strategic solutions to reduce skills mismatch, based on the experiences of JICA projects. Section 4 explores action plans to accelerate skills development in tripartite partnerships between TVET institutions, industry, and the Government. Section 5 summarizes the points and proposes the issues for the way forward.

2. Key Constraints to Increasing the Supply of Skilled Technicians

2.1. Necessity to Analyze Why the Supply Side Does Not Follow Skills Demands

Enterprises often report difficulty in finding competent technicians in Vietnam (**skills mismatch**). They seem to struggle to fill vacant positions (**skills shortages**), which are often caused by the lack of qualified applicants in the labor market and the frequent job hopping of their employees. Moreover, they suffer from insufficient proficiency among new employees (**skills gaps**)[4]. In order to fill the skills gaps which may be the consequence of recruiting unqualified applicants or the insufficient learning ability of employees, they need to provide retraining after recruitment. Large enterprises might have internal capacities to provide sufficient internal training, but small and medium size enterprises (SMEs), who actually need many technicians, may lack the financial and human resources to conduct retraining programs.

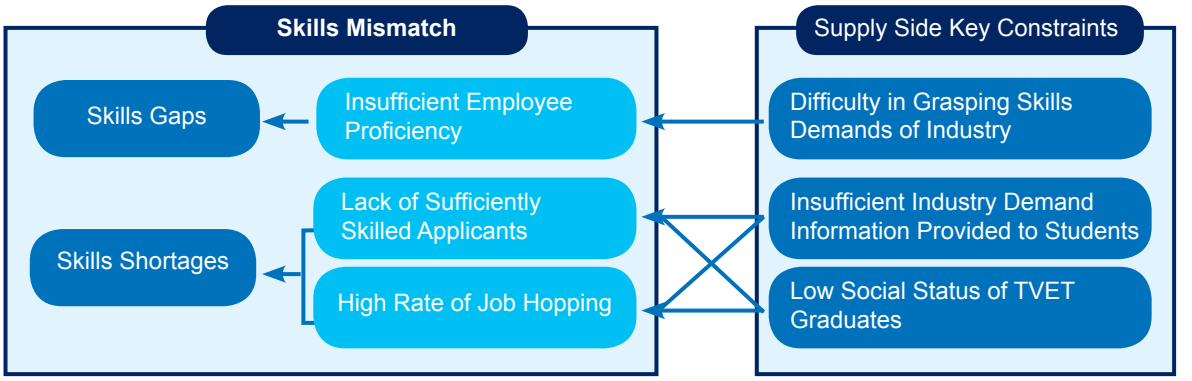
The persistent skills mismatch may indicate that TVET institutions have not been able to supply enough skilled technicians who meet employers' requirements. Certainly, the insufficient capacity of TVET institutions matters, but more investment in training facilities and capacity development of lecturers may not solve all the causes of this skills mismatch. TVET institutions and supervisory government agencies need to understand industry skills demands, in order to invest in the right skills. This is the core of demand-driven training ideology, which calls for formulating training programs according to industry demands.

This demand-driven training concept sounds ideal, but it will also not reduce the skills mismatch unless practical solutions are proposed. In fact, the Government of Vietnam and TVET institutions are becoming more aware of the importance of improving their training programs based on the needs of industry[5]. Nonetheless, they are still struggling to determine how to realize the demand-driven approach. Therefore, it is necessary to analyze what makes it difficult for the supply side, including TVET institutions and students, to follow this approach, considering existing economic, social and institutional constraints.

Among the various causes of the imbalance between skills demands and supply, this policy paper focuses on three key constraints which TVET institutions and their students face: **(i) difficulty in grasping the skills demand of industry; (ii) insufficient information about industry demands for TVET students; and (iii) low social status of TVET graduates**. The link between those constraints and skills mismatch factors is described in Figure 3.

4. Refer to World Bank (2014), pp.51-54 and Mori et al (2012) for the details of skills gap.
5. For example, the Vocational Training Development Strategy for the 2011-2020 period mentioned that the vocational training system should meet employers' demands (Article 1.III.7)

Figure 3. Skills Mismatch and Supply Side Key Constraints



2.2. Difficulty in Grasping Skill Demands of Industry

In Vietnam many TVET institutions do not properly understood the skills that industry requires. They should try to collect skills demand data more proactively. However, TVET institutions need to overcome various challenges in order to obtain comprehensive information on the skills demands of industry. In particular, **the lack of detailed information on specific skills needs at the occupational level** and **the dynamic changes in skills demands** make it difficult for TVET institutions to grasp the skills demands of industry. Training programs developed without sufficient information about industry skills requirements cause employees or job applicants to have insufficient proficiency, which leads to skills gaps and shortages (see Figure 3).

2.2.1. Lack of Detailed Information on Specific Skills Needs

Insufficient labor market information is often pointed out as the main cause that the supply side does not understand employers' needs. Certainly the Government should provide more accurate and detailed information on employment and skills trends, by which TVET institutions can learn general trends in employment of skills. However, in order to improve training programs, TVET institutions need further detailed information about the needs for specific skills or occupations, which varies a lot by industrial sector and region. Even with a maximum effort, the Government will not be able to provide such detailed information.

Thus, **TVET institutions need to collect a certain level of detailed information by themselves. Nonetheless, many of them do not have the capacity to collect and analyze comprehensive information on specific skills needs**. Moreover, not all enterprises may provide comprehensive feedback on their skills needs to TVET institutions. It is a time-consuming job to collect and analyze comprehensive data of specific skills needs in all different departments and section.

2.2.2. Dynamic Changes in Skills Demands

Skills demands are not easy to be determined in part because of its dynamic nature. They are changing constantly, influenced by various economic, social and political factors. In particular, in fast-growing countries such as Vietnam, skills demands may change more frequently than in developed countries, due to the fluctuation of the above influential factors. As industrialization progresses, employers' skills demands also change at the levels of occupation and individual skills[6]. In addition, some enterprises may not be able to specify their future skills needs, because they depend on the external business environment and corporate group strategies which are often directed by their headquarters. The dynamic nature of skills demands makes it difficult for TVET institutions, which should develop curricula considering future needs as well as current ones, to decide in which occupations or skills they should invest more.

2.3. Insufficient Information about Industry Demands Provided to TVET Students

It is likely that **TVET students do not have enough information and opportunities to understand the skills demands of industry**, before they apply for internships and jobs. Improved training programs based on industry demands may not lead

6. The World Bank (2013) mentioned that skill shortages and gap are indicators of a dynamic economy which creates new, more skill-intensive jobs. Accordingly, the education and training system should be equally dynamic in adjusting their training programs to changing skill demands.

to a reduction in skills mismatch, unless TVET graduates themselves aim to apply for jobs that are in high demand.

Currently, TVET students tend to select their jobs, not sufficiently understanding the general skills demands, individual companies' businesses, and their skills requirements. They often rely on fragmented information obtained through their personal networks and uncertain impressions of companies, because they do not receive adequate career information from TVET institutions. As a consequence, enterprises often report that students come to recruitment interviews without even knowing what their businesses manufacture.

Internships may be good supplemental opportunities for TVET students to learn companies' businesses and skills needs. Internships are mandatory at most TVET institutions and many students do them at enterprises, but **it is questionable whether current internship programs are functioning as learning opportunities for students**. In many cases, both TVET institutions and enterprises may not have systematic monitoring and evaluation procedures to determine whether or not students benefitted from their internships.

This situation causes lack of sufficiently skilled applicants, because students may not apply for suitable positions. Furthermore, some TVET graduates quit their jobs very quickly, because they start working without sufficiently understanding the job requirements and companies' policies. The high rate of job hopping is a constraint for skills development in Vietnam, because it discourages employers from investing in employee training. Both lack of sufficiently skilled applicants and the high rate of job hopping lead to skills shortages (see Figure 3).

2.4. Low Social Status of TVET Graduates and Technicians

The previous section discussed the point that insufficient information causes skills shortages. However, it may be true that **young people may not choose their career pathways according to industry demands, even if they have sufficient information**. In Vietnam, they seem to be becoming less confident about the outcomes of TVET programs[7]. This may be not only because they do not have enough information of job opportunities, but also because they know **the low social status of TVET graduates and technicians.**

At this moment, it is hard to claim that their perception is wrong. Vietnamese society tends to value managers and engineers who work at offices much more than technicians who are working at production sites. Unfortunately, this social value is sometimes reflected in professional status at enterprises. TVET graduates are ranked far below university and professional college graduates. Moreover, they might be categorized into the same group with high school graduates. Young people and their parents may well realize this situation. Thus, even if they hear that industry needs more technicians, **TVET programs often remain a last resort for them**. In the end, some young people may join TVET programs and become technicians, but they might not have high enough motivation to hone their skills as professional technicians. This situation causes the lack of sufficiently skilled applicants and the high rate of job hopping, which lead to skills shortages (see Figure 3).

3. Strategic Solutions to Reduce Skills Mismatch

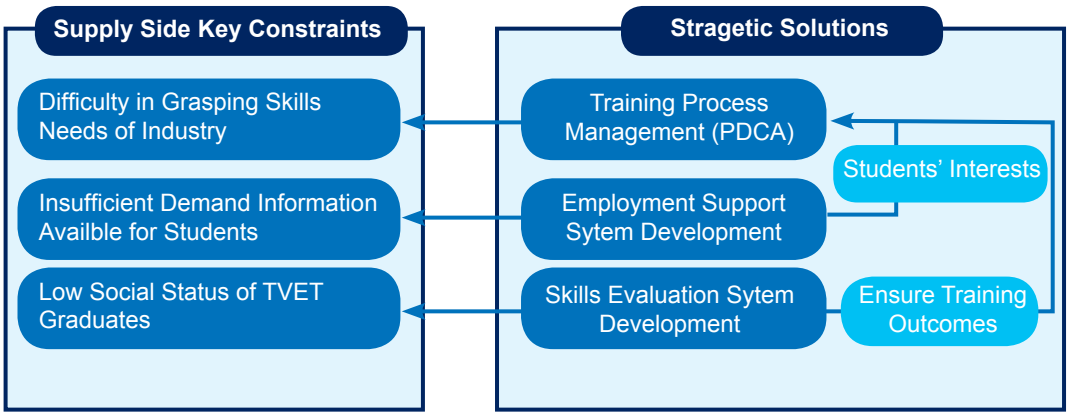
3.1. Three Strategic Solutions to Connect TVET Institutions and Industry

The Japan International Cooperation Agency (JICA) has been trying to provide tangible solutions for the above challenges through pilot projects and policy advising since 2000. Regarding the supply side constraints described above, we propose that TVET institutions develop: (i) a **training process management (PDCA cycle of training) system; (ii)** an **employment support system**; and (iii) a **skills evaluation system**, in close partnership with industry and the government (see Figure 4). In fact, these items are the main outputs of the Project for Human Resource Development of Technicians at Hanoi University of Industry (HaUI), called the HaUI-JICA Project Phase II hereinafter, which was implemented from 2010 to 2013, aiming to increase supply of high-skilled monozukuri technicians in the manufacturing sector.

JICA has been introducing the above three solutions by not only utilizing intellectual resources from Japan but also **customizing the methodologies in a participatory approach and with careful consideration of local contexts**. This means that project working group members, who consist of representatives from counterparts and JICA experts, develop work plans through brainstorming and discussion and implement activities with the consensus of relevant members.

7. Refer to Mori et al (2013), pp.46-48 and World Bank (2014), pp.111-112.

Figure 4. Strategic Solutions for Supply Side Constraints



3.2. Basic Steps of Partnership Development

The above three solutions, in particular training process management and the employment support system, will enable TVET institutions in developing partnerships with enterprises. In general the cooperation between educational and training institutions and industry can be divided into six steps as follows (also see Figure 5).

- **Step 1: Recruitment Activities**. Recruitment of competent technician candidates is the primary and the biggest motivation for enterprises to seek partnerships with educational and training institutions. The recruitment activities include the display and circulation of vacancy notices at schools and job fairs.

- **Step 2: Employment Support Activities**. This includes lecturers by graduates and company visits through which students can learn about businesses and required skills of enterprises.

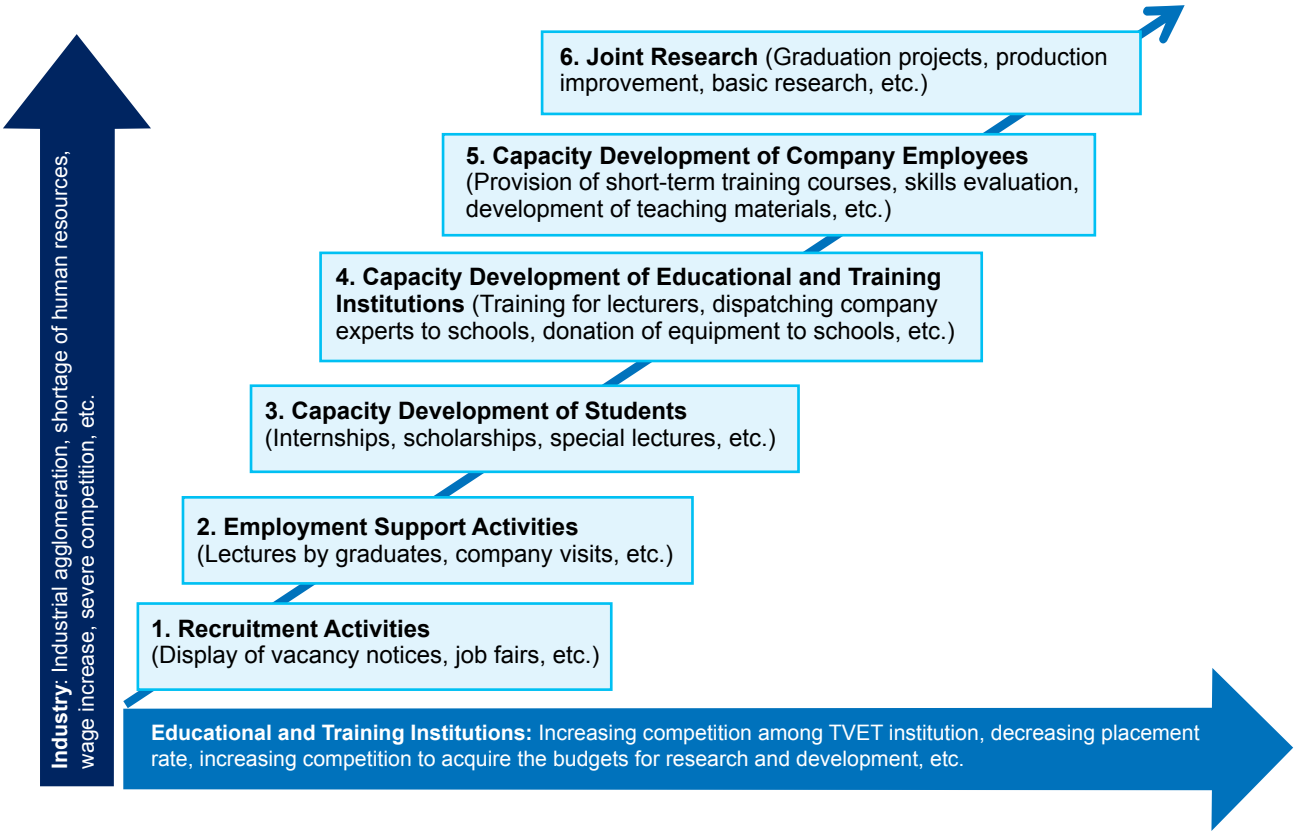
- **Step 3: Capacity Development of Students**. This comprises internships, special lectures by enterprise experts, and scholarship programs. In particular, internships provide students with opportunities to learn practical skills and professional working behaviors, which may be difficult to learn in schools. On the other hand, enterprises can identify suitable candidates for their staff during internships.

- **Step 4: Capacity Development of Educational and Training Institutions**. Enterprises sometimes receive lecturers of educational and training institutions for their internal training courses or provide training for lecturers by dispatching their internal experts to educational and training institutions. This is because, if educational and training institutions improve their capacity and supply more skilled human resources, enterprises may improve their productivity in the long run. They may even donate training equipment if they find sufficient mutual benefits in investing in educational and training institutions.

- **Step 5: Capacity Development of Company Employees**. This includes the provision of short-term training courses targeting company employees and assistance for internal or national skills evaluation by educational and training institutions. At this stage, educational and training institutions should have better skills or knowledge and wider insight in certain fields than company employees.

- **Step 6: Joint Research**. This step may begin when enterprises provide research topics for graduation projects of students. Alternatively, enterprise experts and lecturers from educational and training institutions may jointly research practical solutions for productivity and quality improvement. At an advanced stage, they may conduct collaborative research on cutting-edge devices or materials. At this stage, educational and training institutions should have high-level theoretical knowledge, sophisticated research laboratories, and systems to protect intellectual property rights.

Figure 5. Basic Steps of Partnership Development between Educational and Training Institutions and Industry



Source: Mori (2013)

Currently, most partnerships between TVET institutions and industry appear to remain at the first step in Vietnam[8] . A small number of institutions may have proceeded to the advanced stages, but they are still the minority. For example, regarding employment support activities in Step 2, some enterprises reported that they are not willing to accept company visits by lecturers and students anymore, because their unprofessional behaviors disturbed production operations. Regarding Step 3, many TVET students participate in internships in enterprises, but the quality of programs varies and few TVET institutions have a mechanism to assure that students gain practical skills through internships. In addition, some enterprises may regard intern as part-time workers.

3.3. Training Process Management (Training PDCA Cycle): Optimizing Training Programs based on Industry Demands

Training process management, which consists of the PDCA (Plan, Do, Check, Action) cycle of training program development and implementation, helps TVET institutions understand and analyze the skills demands of industry in a proactive way. The training process management system consists of 7 main steps: (i) determination of industry skills demands; (ii) selection of the training fields; (iii) development of curricula; (iv) preparation for training program implementation; (v) implementation of training programs; (vi) evaluation of training programs; (vii) formulation and implementation of action plans (see Figure 6).

8. According to the survey conducted by the World Bank, 83% of enterprises selected ”recruitment” as the main purpose to contact with education and training institutions. In addition, 45% of them selected “work experience for students” such as internships and apprenticeships; 38% for further training of company employees; and the rest for other purposes (World Bank 2013). Analyzing the inquiries from enterprises to HaUI during the HaUI-JICA project, 37.4% was for recruitment; 23.0% for internship; 11.7% for company employees training, and the rest for other purposes (Mori et al 2013).

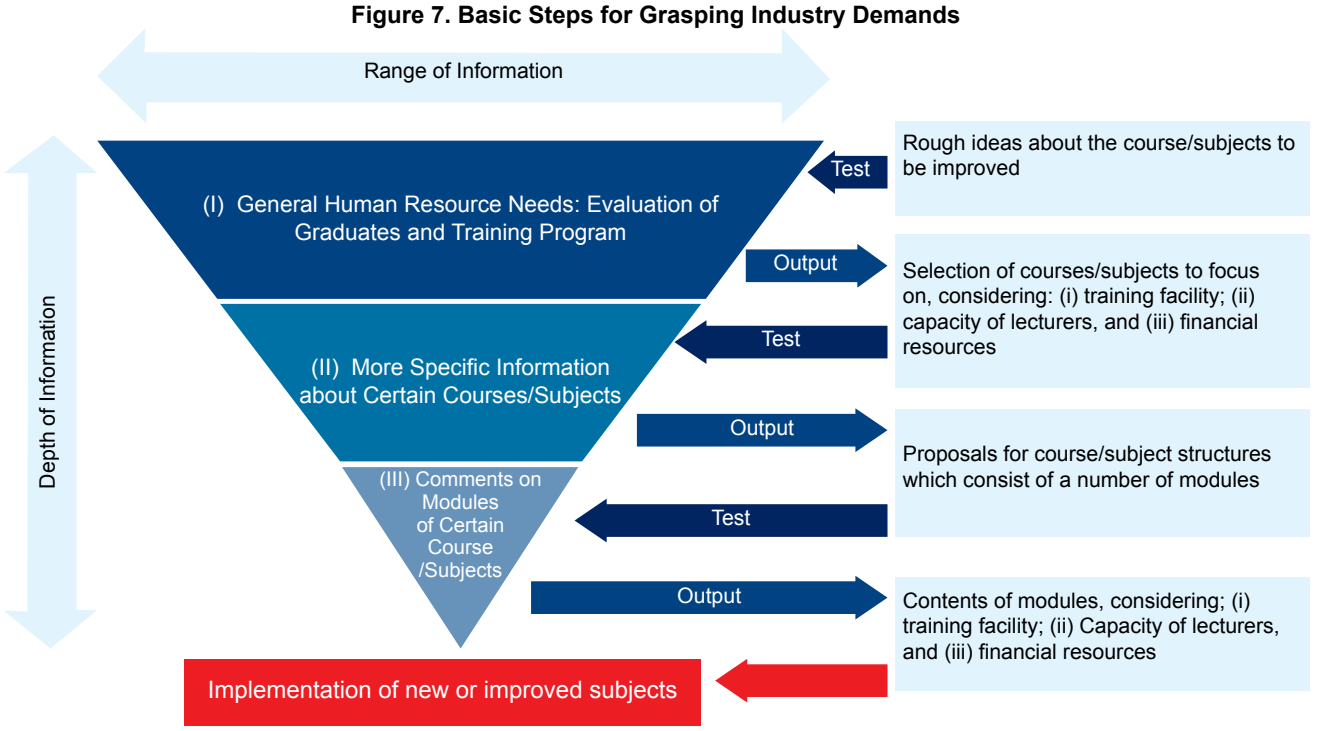
Figure 6. Overview of Training Process Management

Source: Mori and others (2013)

The core of training process management is constant interaction with industry. In the first step, determining industry demands, TVET institutions collect information on detailed skills needs by visiting enterprises which employ their students or those who would recruit them in the future. When doing so, **TVET institutions should always bring their proposals on training program improvement and elicit enterprises' comments**, and not simply to go and ask for what they want.

Even during the following steps, TVET institutions are required to keep interacting with enterprises in order to formulate optimal curricula (see Figure 7 and Box 1). **These continuous and direct conversations with enterprises give TVET institutions a chance to explore future or latent skills needs of industry**. With mutual trust built upon consistent interactions, enterprises may feel more comfortable providing information about latent skills needs to TVET institutions. Furthermore, proactive approaches from TVET institutions encourage enterprises to contemplate latent or dynamic skills needs. In short, these dynamic skills needs may be determined through interaction between the proposals from TVET institutions and responses from enterprises or vice versa.

Figure 7. Basic Steps for Grasping Industry Demands



Source: Mori and others (2012)

Box 1. Machinery Maintenance Short-term Course Developed under the HaUI-JICA Project

This is an example of Step 5 of Figure 5. Under the HaUI-JICA Project Phase II, HaUI went through the PDCA cycle of training process management by implementing a short-term course on machinery maintenance[9]. The target training field was narrowed down through face-to-face interviews with 32 companies. The project's working group members developed the course outlines and training materials, having a series of discussions with the focused company group. Consolidating all efforts, HaUI organized 4 rounds of courses (2 each for mechanical maintenance and electric system maintenance) in March and April 2012. The course attracted 76 participants from 17 enterprises. After the courses, the project working group members conducted the evaluation survey and drafted the action plans to improve the course. Most importantly, HaUI members carried out all processes, with technical assistance from Japanese experts.

For further details about the course, please visit: http://haui.edu.vn/en/page/jicaproject2

Box 2. 5S Activities for Improvement of Working Behaviors

This is an example of Step 3 of Figure 5, in which HaUI tried to improve students' behaviors, in partnership with industry. During the survey organized under the HaUI-JICA Project Phase II, many companies reported that TVET graduates do not have proper working behaviors and lack knowledge and attitudes to organize their work and working places in an efficient, clean and safe manner. In response to this comment, HaUI started implementing 5S (seiri/sorting, seiton/setting in order, seiso/shining or clearing, seiketsu/systemizing, sitsuke/standardizing or self-discipline) with technical assistance from JICA experts. 5S is widely recognized by enterprises as a useful means to improve productivity and work environments. HaUI launched 5S activities by establishing a 5S Committee, chaired by a vice rector, and four trial workshops, and then expanded 5S activities into all faculties, centers and departments. HaUI also started organizing a "Monthly 5S Day"on the 25th day of every month when 5S survey teams assess the 5S implementation situations in selected places on the campus. In addition, HaUI has been organizing "5S Weeks," which is a biannual event meant to increase awareness of the 5S among all lecturers, staff and students. During 5S Weeks, 5S survey teams conduct assessment of all faculties, centers, and departments. In the first 5S Week in April 2011, enterprises experts were also invited as external assessors. According to the assessment results, an evaluation committee gave awards to those who have the best practices. Many representatives from enterprises and other TVET institutions joined the events and observed how HaUI has been promoting 5S.

Besides the curricula, **another important output from interaction with enterprises is the improvement of practical training lessons**. For example, HaUI developed simulators for the electric system maintenance course, (see Box 3) and developed a short-term course on quality control (see Box 4) with significant input from Japanese enterprises.

9. The first phase project, entitled "the Project for Strengthening Training Capabilities of Technical Workers at Hanoi Industrial College (also called the HIC–JICA project), was implemented from 2000 to 2005. The project aimed to upgrade the technological knowledge and skills of prospective technicians in the fields of machinery processing, electric control, and sheet-metal processing. Through this project, HaUI learned certain parts of training progress management such as Process 4, Process 5 and a part of Process 6 in terms of evaluation of particular subjects. HIC was upgraded to HaUI in December 2005, as a result of the first phase project. The HaUI-JICA Project Phase II assisted HaUI to run the whole process of training process management, with special attention to Process 1, Process 2, Process 3, Process 6, and Process 7.

Box 3. Improvement of Practical Training Equipment in Cooperation with Enterprises

This is an example of Step 4 of Figure 5. One challenge that HaUI faced in developing the short-term course on machinery maintenance was how to make the course practical. Enterprises often think that the courses organized by schools are too theoretical. In preparation for this course, the project members tried to learn what kind of problems enterprises face in their daily operation and how they are training their employees, with assistance from JICA experts. As a result, the project working group members designed and developed electric simulators, thanks to practical input from Denso Manufacturing Vietnam. The process to develop training materials turned out to be a great learning opportunity for HaUI lecturers.

Box 4. Development of Short-term Course on Quality Control

This is an example of Steps 3 and 4 of Figure 5. HaUI developed and implemented a short-term course on the "basics of quality control (QC) and application of QC 7 tools" for university course students under the HaUI-JICA Project Phase II. HaUI was prompted to create this course because enterprises commented that they need more people who understand QC concepts. The project working group members elaborated the curriculum, teaching methods, and teaching materials, keeping in mind that students do not have working experience in production sites. For example, the course included a paper airplane workshop where students could experience the importance of quality control by folding a paper airplane in a team. At the end of the course, students worked on group assignments through which they applied QC 7 tools to analyze familiar issues such as the quality of the library, cleaning of common places, and on-campus traffic safety. For the formulation of this course, HaUI received various types of support from Toyota Motors Vietnam (TMV). The project's working group members had the chance to learn how Toyota provides QC training for their entry-level staff. In addition, they learned how enterprises improve their operations by observing a QC convention given by TMV and its suppliers. Finally, Toyota QC teams made a model presentation on the final day of the course after the students' presentation.

Active interaction with enterprises may also give TVET institutions opportunities to develop tailor-made short-term courses for enterprises (see Box 14). Providing short-term courses for enterprises will enable TVET institutions to absorb up-to-date technologies which can be utilized to improve training programs for regular students. In addition, it will help TVET institutions obtain additional income, with which they can improve their training facilities.

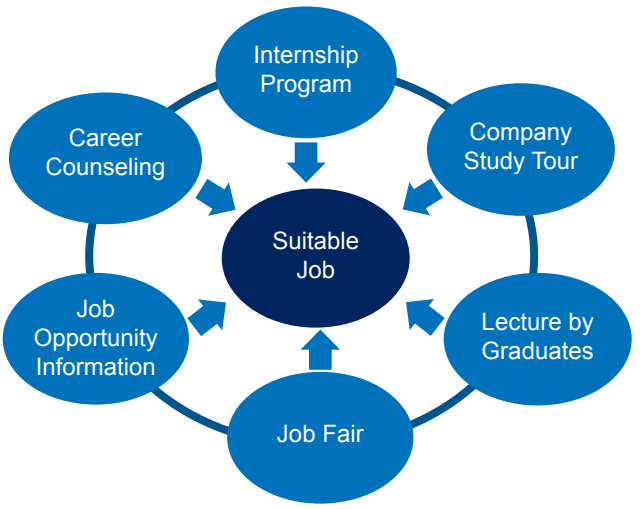
3.4. Employment Support System: Helping students find suitable jobs and enterprises find suitable candidates

The employment support system assists students in finding suitable jobs by providing practical information on business trends, enterprises, and skills needs. At the same time, the system will give enterprises a chance to identify appropriate candidates. The employment support system comprises a sequence of activities including: (i) internship programs; (ii) company study tours; (iii) lectures by graduates; (iv) job fairs; (v) collection and circulation of job opportunity information; and (vi) career counseling (see Figure 8).

Some TVET institutions pick up only one or two components and implement them as independent activities. However, **all components of the employment support systems are linked and complement each other**. For example, internships are very useful means not only to enhance practical skills and working behaviors of students but also to learn about enterprises (see Box 5). Through company study tours or lectures by graduates, students will obtain preliminary information about an enterprise, which will enable them to decide which company they want to apply to for internships or jobs (see Box 6). Lectures by graduates can be organized as part of job fairs, where TVET institutions can collect job opportunity information. Job opportunity information is

necessary for lecturers to provide effective career counseling for students. With all the information obtained through employment support activities, lecturers will be able to recommend suitable enterprises for internships or recruitment for students.

Figure 8. Overview of Employment Support System



Source: Mori and others (2013)

Box 5. Making Internship Programs More Effective in Cooperation with Enterprises

This is an example of Step 2 of Figure 5. Toho Vietnam, a leading Japanese manufacturer of plastic injection molds, has regularly recruited graduates from HaUI's Vietnam-Japan Center (VJC) and has received about 20- 30 interns from VJC every year. For the internship program in 2011, HaUI had several rounds of discussion with the management of Toho Vietnam regarding the improvement of internships, with support from JICA experts. Both sides agreed to improve internship programs for different purposes. VJC intended to improve the practical skills of their students through internships, while Toho wanted to improve the retention rate of their employees by finding more suitable candidates through internships. As a result, Toho agreed to provide on-the-job training in a workshop after classroom lectures and examinations on basic knowledge and skills. At the same time, VJC promised that they would select appropriate students, provide sufficient briefing before the internship, and closely monitor the performance of students. Through this comprehensive internship program which consists of classroom lectures and structured on-the job training, VJC students can learn professional working behaviors and required skills and knowledge, while Toho can identify suitable candidates for their future staff. Furthermore, since Toho shared the examination results during the internships, lecturers could also understand the students' strengths and weaknesses. As a further step, VJC/HaUI organized a company study tour to Toho prior to the internship program in 2012, in order to select appropriate candidates who are really interested in mold and die manufacturing.

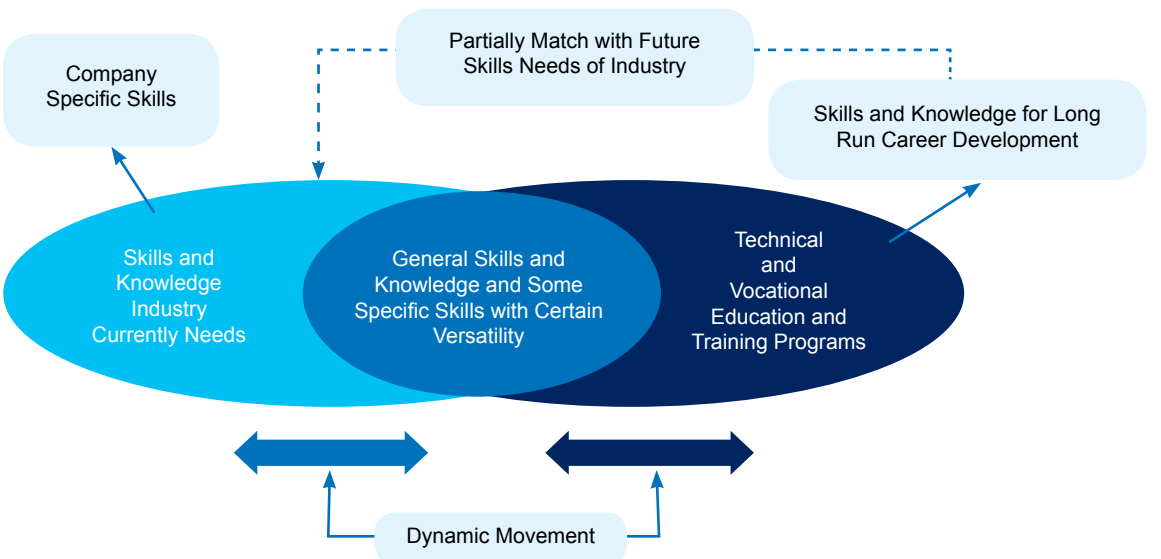
Box 6. Organizing Comprehensive Company Study Tours

This is an example of Step 2 of Figure 5. When the HaUI-JICA Project Phase II tried to plan a company study tour, some lecturers mentioned that few companies would be willing to accept it. In fact, some companies said that they did not want to receive study tours from TVET institutions, because the purpose of study tours is unclear, lecturers and students are usually ill-prepared, and they could even disturb production operations. In order to obtain trust from enterprises, HaUI attempted to reform the whole company study tour process with technical assistance from JICA experts.

As part of the new process, the project working group members needed to: (i) prepare proposals with clear objectives and outputs in discussion with enterprises; (ii) provide students with an initial briefing explaining an overview of enterprises and giving clear instructions for preparation including proper dress, behavior and duties of students; (iii) oblige each student to ask at least one question in Q&A sessions after factory tours; (iv) organize follow-up workshops where students can summarize their findings through group work and presentations; (v) make sure that all students submit reports; (vi) share the compiled report with enterprises. In turn, many companies made comprehensive programs which consist of a company overview, factory tours, and Q&A session with HaUI graduates and managers. In the end, HaUI managed to organize 17 study tours in which a total of 273 students and 82 lecturers participated during the project.

Furthermore, **the employment support system will enable TVET institutions to understand students' interests in skills and careers**. With this information, TVET institutions can formulate realistic organizational strategies, considering both students' career interests and the needs of industry. This is a very important process, because, in reality, certain aspects of students' skills and career interests may not overlap with current skills demands (see Figure 9).

Figure 9. Dynamic Movement of Skills Needs and Roles of TVET Institutions



This is not simply because students do not have enough information about industry demands but also because they are considering long-term career development, while enterprises tend to focus on immediate skills needs based on their current vacancy situation and business plan. In order to formulate optimal training programs which cover future or strategic skills interests of students as well as industry's current skills needs, TVET institutions need data regarding students' skills and career preferences. In fact, some aspects of students' strategic skills interests may match with industry skills needs in the long term.

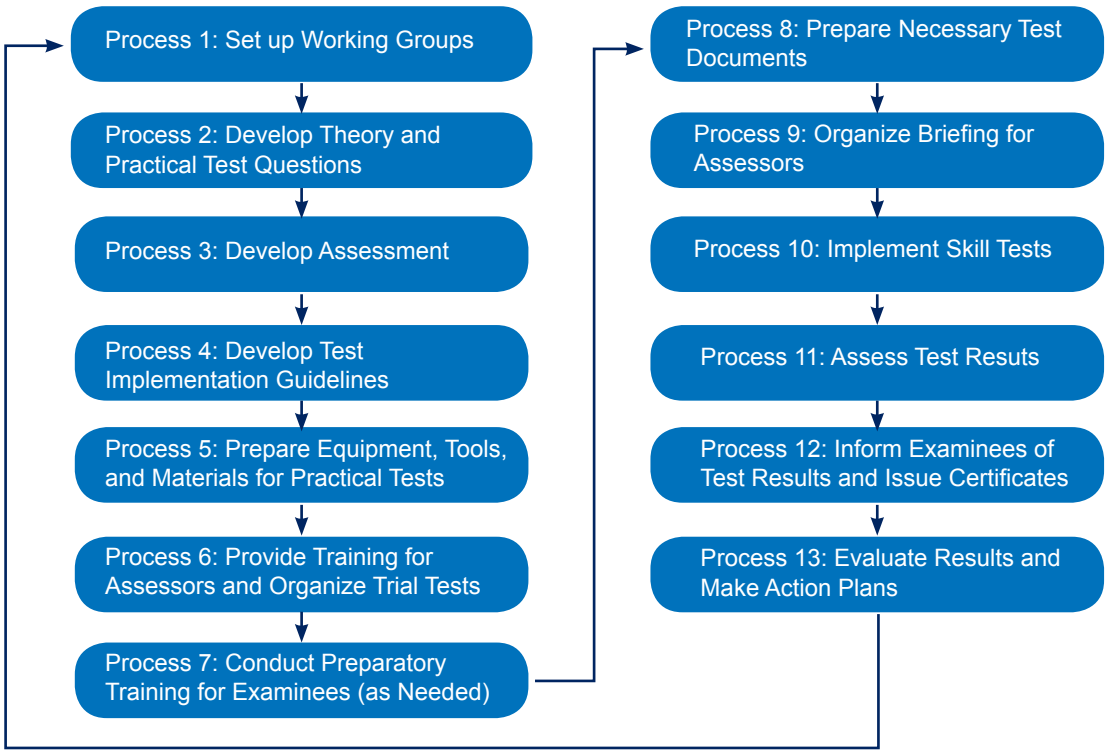
3.5. Skills Evaluation System: Ensuring Fair Social and Economic Status of Technicians

The development of a skills evaluation system will contribute to improving the status of TVET graduates and technicians at enterprises and in society. At this moment, "skill" is a rather subjective and ambiguous term in Vietnam, because attainment of vocational certificates is not always regarded as evidence of skills. **The development of a national skills evaluation system should make skills a more objective, reliable, and sharable indicator in industry and society**.

Vietnam has adopted the skills testing method for evaluation, which should be formulated in reference to skills standards[10]. The skills test development and implementation process comprises 13 main steps shown in Figure 10. TVET institutions, which often act as skills test centers, need to make extensive efforts in all of the preparation needed for the implementation of skills tests.

10. The organization of national skill tests is regulated by the Circular No. 15/2011/TT-BLDTBXH on organization and management of the national occupational skills assessment and certification, which was issued by MOLISA on 10 May 2011. Currently the GDVT is drafting a new and more comprehensive degree on skill assessment and certification.

Figure 10. Procedures for Skills Test Development and Implementation



Source: Drafted in reference to Mori and others (2013)

The effectiveness of skills tests depends on whether industry recognizes skills tests as an objective and reliable indicator of skills. In order to develop skills tests which meet industry requirements, skills test working groups need to prepare skills test questions, assessment criteria and equipment and tools by carefully studying actual skills applied in both foreign-invested and local enterprises (see Box 7). Furthermore, skills tests should be organized according to a unified procedure and common assessment criteria, in order for industry to find them credible. The continuous capacity development of assessors is important in order to achieve this goal. These issues will be discussed in Section 4.4.

Box 7. Development of Skills Test on Machining Center Operation

This is another example of step 5 of Figure 5. Under the HaUI-JICA Project Phase II, HaUI developed a skills test on machining center operation, considering the fact that HaUI had been leading the development of a national skills standard on CNC machining. The project working group members developed: (i) implementation guidelines; (ii) theory test questions; (iii) written test questions for the practical test; (iv) practice test questions; (v) assessment criteria; and (vi) other documents for administering the skills test. Along with the preparation of all documents, a series of training courses for skills test assessors was organized. In order to reconfirm the applicability of skills test questions to actual production operation, the project working group members obtained inputs from enterprises by learning their internal skills test questions and actual production procedures, and learning what kind of tools are suitable for skills tests.

On 21-22 August 2012, HaUI organized a Level 2 (out of 5 levels) pilot skills test on machining center operation, which was the first-ever skills test in CNC machining in Vietnam. Ten students selected from VJC's machinery processing course participated in the two-day skills test. The General Directorate of Vocational Training (GDVT) recognized this achievement and certified HaUI as a national skills test center on CNC machining in November 2012. From 15-16 December in 2012, HaUI organized the first national skills test for 10 technicians from PENTAX-Richo Imaging Product Vietnam. Prior to this national skills test, HaUI organized preparatory training courses for examinees, in order to give them a chance to review theoretical knowledge and be familiarized with HaUI's machine tools. In December 2013, HaUI organized another skills test on machining center operation for 26 examinees from 5 enterprises, Hanoi High Technology Vocational College, and HaUI.

Box 8. Skills Tests on Conventional Turning and Milling Machine Operation

In March 2012, GDVT, the Japan Vocational Ability Development Association (JAVADA), and JICA organized a trial skills test on conventional turning machine operation at Hanoi Industrial Vocational College, inviting an instructor from Denso Japan. Thirty-five lecturers from TVET institutions joined the training and 7 of them took a trial skills test. Following this result, GDVT organized the first national skills test on conventional turning machine operation in December 2012. Twelve examinees from TVET institutions and Japanese enterprises participated in this test. In July 2013, another skills test was organized with 18 examinees from TVET institutions and Japanese enterprises. Based on previous achievements, GDVT and JAVADA signed an MOU for skills test promotion in Vietnam, foreseeing the further expansion of skills tests in Vietnam in August 2013. In December 2013, GDVT, in cooperation with JAVADA, organized the first national skills test on conventional milling machine operation with 8 examinees at HaUI. Through those skills tests, TVET institution lecturers learned how to organize skills tests. In addition, the series of skills tests have increased awareness among Japanese enterprises. A next step would be how to attract more participants from Vietnamese and other FDI enterprises.

The establishment of a reliable national skills evaluation system will provide various benefits for employers, TVET institutions, and students. Employers can make skills certificates one of the criteria for recruitment and promotion. They will be able to review the skills and knowledge levels of their employees through skills tests. For instance, it may sometimes happen that the skills tests results do not match with a worker's actual position in a company. A higher-positioned staff member may fail a skills test due to lack of applied knowledge and skills. On the other hand, a lower-positioned technician may demonstrate knowledge of these same skills by passing a test. Thus, the company's management will obtain another objective criterion to assess their employees' skills, while employees will start competing to acquire higher skills. This will lead to the improvement of quality and productivity at enterprises.

Students will be able to demonstrate some of their knowledge and skills with skills certificates. In addition, skills certificates can help TVET students acquire not only fair treatment from employers and colleagues but also a certain amount of respect from society.

TVET institutions can help students get suitable jobs by encouraging their students to acquire skills certificates. At the same time, a reasonable skills test pass rate of their students may give certain credibility for the quality of their training programs. Moreover, TVET institutions will be able to apply knowledge and skills obtained through the development and implementation of skills tests in regular training programs. In turn, this will not only improve students' skills but also increase the skills test pass rate of their students and help them obtain suitable jobs.

4. Accelerating Skills Development through Tripartite Partnerships between TVET Institutions, Industry, and the Government

4.1. Importance of Tripartite Partnerships for Actions

JICA has been assisting Vietnamese counterparts in introducing the above three strategic solutions for the skills mismatch. However, they are applied in a limited number of TVET institutions, due to various constraints. TVET institutions should make more efforts to improve their training programs by applying three solutions. At the same time, **tripartite partnerships between industry, TVET institutions, and the government are required, because TVET institutions will not be able to resolve all issues alone**. For instance, even if TVET institutions try to improve their training programs based on industry needs, they will not able to do without enterprises' cooperation to provide concrete information.

On the other hand, there may be a risk that the tripartite partnerships might become deadlocked if nobody is leading activities. In order to avoid this situation, we propose that **TVET institutions should lead activities regarding training process management; TVET institutions and enterprises should lead efforts regarding an employment support system; and the Government should lead activities regarding a skills evaluation system**.

Actions required to expand the three solutions are listed basically in the order of priority in the following sections[11] (also refer

11. This part was developed based on Mori (2013).

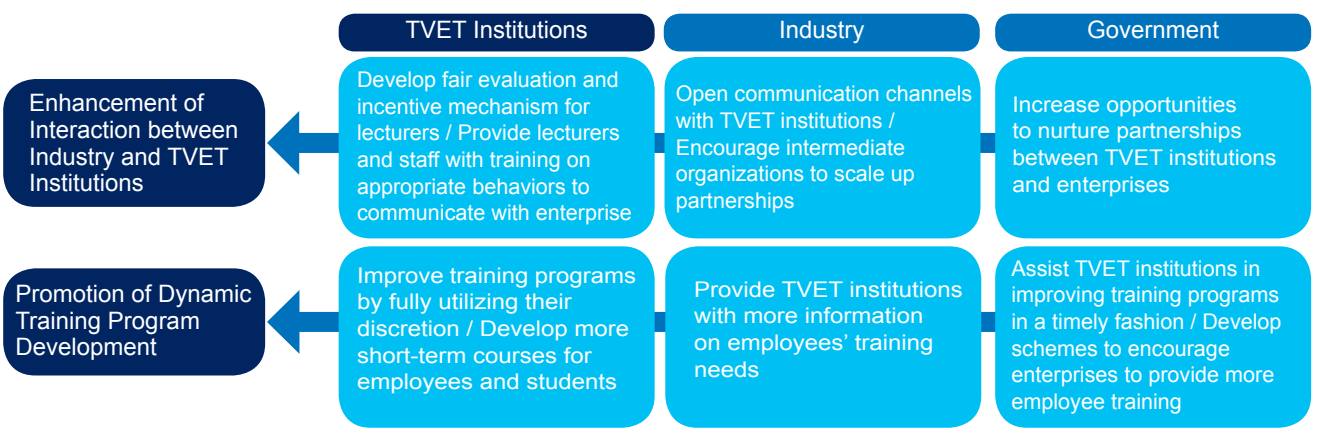
to Annex A for the list of proposed actions). In particular, we recommend the tripartite partners **to begin with implementing the actions for enhancement of interaction between industry and TVET institutions** (see Section 4.1.1). This will be the foundation for all partnership activities. In addition, we propose some possible indicators to monitor the results of actions in Section 4.4.

4.2. Actions Required for Expansion of Training Process Management

More TVET institutions are becoming aware of the necessity to improve their training programs based on industry demands. Some TVET institutions have even established a section which is in charge of developing partnerships with enterprises. However, they still struggle to build partnerships with enterprises, which is the core of training process management. In particular, many TVET institutions have not conducted Process 1 to determine industry demands (see Figure 6). In addition, even if TVET institutions manage to collect information regarding skills demands, many of them lack the capacity to revise or develop training programs. TVET institutions need to lead a way to reflect current and latent skill demands in their training programs on a timely and flexible basis. Therefore, in the following sections, we propose action items to help: (i) enhance interaction between TVET institutions and enterprises; and (ii) promote dynamic training program development (also see Figure 11 for the summary of actions).

We suggest that **TVET institutions take leadership in activities for expansion of training process management**. While enterprises and the Government should definitely play their parts, the implementation of training programs is eventually TVET institutions' responsibility. Thus, TVET institutions should proactively approach enterprises and the Government, in order to achieve the above targets.

Figure 11. Actions Required for Expansion of Training Process Management



4.2.1. Enhancement of Interaction between Industry and TVET Institutions

Proposed TVET Institutions Actions

(1) Develop a Fair Evaluation System and Incentive Mechanisms to Encourage Lecturers to Visit Enterprises

Regarding the development of partnerships with enterprises, the most common obstacle which TVET institutions face is that many of their lecturers do not think it is their task to visit enterprises. In order to motivate them, TVET institutions should develop a fair evaluation system of lecturers who actively explore partnerships with industry and provide appropriate incentives. If interaction with enterprises simply increases their working hours and even incurs additional costs, no lecturers will be eager to visit enterprises by themselves. TVET institutions may include active interaction with enterprises into a lecturer's job description, while setting up evaluation criteria and providing necessary supports such as transportation.

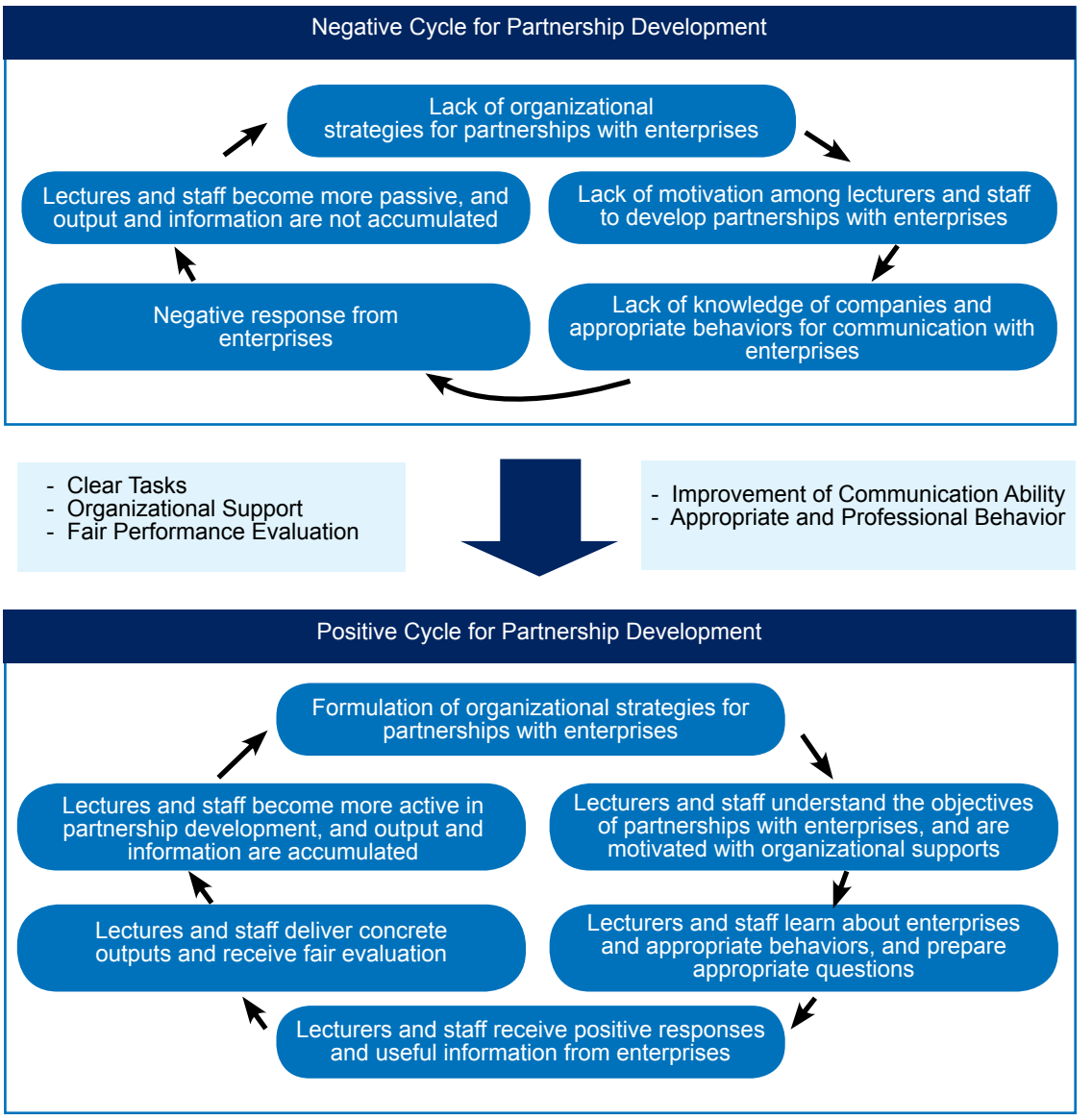
(2) Provide Lecturers with Training on Appropriate Behaviors in Communicating with Enterprises

The management of TVET institutions should provide lecturers with basic training on appropriate behaviors in communication with enterprises. In many cases, enterprises feel reluctant to communicate with lecturers and staff of TVET institutions, not because of their insufficient technical knowledge but because of their unprofessional behavior. Enterprises often point out that: (i) the purpose of visits is unclear; (ii) their requests come at very short notice; and (iii) they sometimes come in inappropriate clothing (e.g. with sandals). This is something TVET

institutions can improve immediately.

At this moment, many lecturers and staff of TVET institutions are trapped in a negative cycle which discourages them from actively exploring partnerships with enterprises. By implementing the above action plans, TVET institutions can aim to convert a negative cycle into a positive one of partnership development with a strong commitment from top management and clear organizational policies (see Figure 12).

Figure 12. Improving the Cycle of Partnership Development with Enterprises



Proposed Industry Actions

(1) Open Communication Channels with TVET Institutions

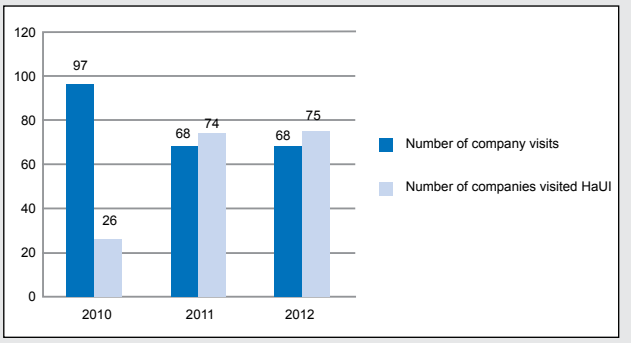
Enterprises should keep communication channels with TVET institutions open. TVET institutions tend to hesitate to contact enterprises because they do not know whom to contact or they think enterprises are not interested in them. If enterprises can assign communication focal points, TVET institutions would feel more comfortable approaching them.

Enterprise staff hesitate to communicate with TVET institutions, in part because they distrust or simply do not know about TVET institutions. One way to change this situation would be to encourage them to visit TVET institutions, talk with their management staff, and observe their training and facilities. This simple approach becomes an ice-breaking opportunity for both sides (see Box 9).

Box 9. An Example of How Two-way Communications Promoted Partnerships

In the early stage of the HaUI-JICA project, one of the biggest challenges is the negative image employers had of TVET institutions. In order to break through this deadlock, the project working group members tried to visit as many companies as possible. They visited 97 companies in 2010 and 68 companies in 2011 and 2012. These intensive company visits were a chance to promote mutual understanding.

However, some concrete partnerships were developed, when enterprises members started visiting HaUI in turn. The number of companies that visited HaUI increased from 26 in 2010 to 74 in 2011 and 75 in 2012. Discussion after observing training activities and facilities enabled both sides to focus on realistic and concrete proposals. HaUI members appreciated practical advice from enterprise experts, while enterprise staff were able to make a fair evaluation on HaUI's capacity and constraints.



Campus visits will also give enterprises opportunities to reconsider their skills needs. One enterprise representative said "after a campus visit, I felt that we should specify demands for HaUI more clearly". This was a starting point for partnership development. Therefore, enterprises should be encouraged to visit TVET institutions, while TVET institutions should organize meetings and events which are attractive and fruitful for enterprises.

(2) Encourage Intermediate Organizations to Scale up Partnerships with TVET Institutions

As a further step, it would be desirable for industry to encourage intermediate organizations such as business associations, chambers of commerce, and management companies of industrial zones to facilitate partnerships between TVET institutions and enterprises more actively. The existence of active intermediate organizations will scale up partnerships effectively. For example, if they can help TVET institutions distribute information about events such as job fairs and short-term courses to their member companies, partnerships would be expanded more efficiently than relying on one-to-one communication (see Box 10). This will be in particular helpful for SMEs which do not have sufficient internal resources to develop partnerships with TVET institutions.

Box 10. Campus Tours in Cooperation with Industrial Zone Management Companies

During the campus tour organized in the first 5S Week in April 2011, 27 enterprises visited HaUI (also see Box 2). HaUI identified some opportunities for developing partnerships through conversation with enterprises during the campus tour. For example, HaUI met with Nagatsu Co., Ltd, for which it provided a short-term training course later (see Box 14).

HaUI managed to attract many enterprises, largely because of cooperation from two industrial zone management companies, namely Thang Long Industrial Park I (TLIPI) Cooperation and Nomura-Haiphong Industrial Zone Management (NHIZ) Corporation. They circulated the information to their tenant companies and organized a half-day tour to HaUI on the occasion of 5S Week. This cooperation demonstrates that industrial zone management companies could potentially facilitate partnerships between TVET institutions and enterprises. In particular, they may facilitate partnerships effectively during the initial development stage, when many new tenant companies are looking for human resources. This cooperation would be especially beneficial for those tenant companies that are also SMEs, since they generally do not have connections with TVET institutions.

On the other hand, some industrial zone management companies reported difficulties dealing with TVET institutions including even HaUI. For example, event notices are often made at very short notice and TVET institutions staff tend to give too many administrative tasks to industrial zone management companies. Thus, in order to build good relationships with industrial zone management companies, TVET institutions should learn professional business manners more seriously.

Proposed Government Actions

(1) Increase Opportunities to Nurture Partnerships between TVET Institutions and Enterprises

The Government should provide more opportunities where TVET institutions and enterprises can discuss appropriate training programs. One action they can take is to set up an institutional mechanism in the form of a committee, council, or forum where representatives from both sides can discuss current and future skills needs. Furthermore, the development of both national-level and provincial-level mechanisms would be ideal, because skills needs may vary by province or even district and FDI is gradually expanding to local areas beyond suburbs of Hanoi and Ho Chi Minh City. The selection process and criteria of institutional members should be transparent and fair, considering a balance between ownership and types of enterprises and TVET institutions.

Nonetheless, it will take time to establish and operationalize official institutional mechanisms for stakeholder partnerships. Thus, it would be more realistic to organize pilot events in parallel. For example, a trial matching meeting between TVET institutions and Japanese enterprises was organized in April 2014 (see Box 11). More opportunities for this kind of information exchange are desirable, while waiting for the launching of institutional mechanisms for stakeholders partnerships.

Box 11. Trial Matching Meeting between TVET Institutions and Japanese Enterprises

In April 2014, a trial matching meeting between TVET institutions and Japanese enterprises was organized in Hanoi as an activity of the Vietnam Japan Joint Initiative, Working Team for Human Resource Development. Representatives from 12 TVET institutions, 5 Japanese Enterprises, GDVT, the Embassy of Japan, JICA, and Japan External Trade Organization (JETRO) participated in the meeting. The main purpose of the meeting was to understand the perception gaps between TVET institutions and Japanese enterprises regarding skills needs and the role of education and training. At the meeting, TVET institutions introduced characteristics of their training programs, while Japanese enterprises presented company overviews and outlined the kind of human resources they need. Obviously, one meeting was not enough to figure out where skills mismatch exists, but it was considered a good kick-off event to explore the potential of partnerships for both sides. In fact, the working team of the Vietnam Japan Joint Initiative is currently discussing organizing more matching events, involving Japanese SMEs who may need more skilled human resources. They may also consider organizing campus tours to selected educational and training institutions, following matching meetings. This is a very good development, but it would be more desirable if the Vietnamese side took stronger initiatives in these kinds of activities.

4.2.2. Promotion of Dynamic Training Program Development

Proposed TVET Institutions Actions

(1) Improve Training Programs by Fully Utilizing their Discretion to Revise Curricula

TVET institutions should work to actively improve regular training programs for students, utilizing their current discretion to revise curricula to the fullest[12]. It would be ideal for their discretion to increase in the future, but many TVET institutions may not fully take advantage of their current ability to change curricula. Thus, they should improve course content by introducing up-to-date knowledge and skills as much as they can now, while waiting for the regulatory framework to change (see Box 12 and Box 13).

Box 12. Improvement of Mechanical Drawing Course at HaUI

Through the industry needs survey in 2010, HaUI discovered that Japanese enterprises evaluated the ability of HaUI graduates to read mechanical drawings much lower than Vietnamese enterprises did. By conducting interviews with the focused group of enterprises, the project working group members found that many HaUI students cannot read

12. Currently, TVET institutions can change curricula of optional subjects given by GDVT up to 30% of total training hours.

or draw mechanical drawings in **third angle projection**, which Japanese companies use, and read **the symbols of geometric tolerance, surface roughness,** and **fitting and tolerance**. Based on the above findings, the project working group improved the mechanical drawing courses at the vocational college, professional secondary, professional college, and university levels by: (i) adding the third angle projection method and the subjects of fitting and tolerance, geometric tolerance, and surface roughness to the curricula; (ii) adding drawing exercises for third angle projection and drawing with symbols of fitting and tolerance, geometric tolerance, and surface roughness; (iii) adding the subjects of third angle projection method and drawing symbols of fitting and tolerance, geometric tolerance, and surface roughness to the textbooks; and (iv) developing simulators such as a transparent box which enable lecturers to easily teach the difference between the first angle projection and the third angle projection.

Box 13. Attempts to Introduce New Subjects under JICA's Grass-Roots Projects

JICA has been implementing the "grass-roots" projects which facilitate development-oriented collaboration between Vietnamese counterparts and Japanese local governmental or non-governmental organizations and schools. This scheme has been making some small but practical improvement of TVET programs.

Hanoi Industrial Vocational College (HIVC) has been implementing two grass-roots projects with the Education Committee of Chiba Prefecture since 2009. The first project from 2009 to 2011 aimed to improve the capacity of HIVC lecturers in **programming of a Peripheral Interface Controller (PIC)**, which is the most popular type of micro controller. Through training in Japan and interactions with teachers of Chiba Industrial High School, HIVC lecturers learned PIC programming teaching methods and practical training exercises. Because of this project, HIVC has started introducing PIC programming in their electronics course with textbooks and teaching equipment developed under the project. At this moment, HIVC is implementing the second project with the Education Committee of Chiba Prefecture, which aims to improve **the knowledge and skills of precision machining** among HIVC lecturers. They are learning about appropriate assignments for practical lessons and assessment methods. This will also help HIVC organize better skills tests, since it was assigned as a national skills test center for conventional turning machine operations.

Hai Phong Industrial Vocational College (HPIVC) implemented a grass-roots project in cooperation with Kitakyushu City Government and Kitakyushu International Techno-cooperative Association (KITA) from 2011 to 2014. This project aimed to improve HPIVC lecturers' knowledge of **production management** through training in Japan and technical advice from experts. It allowed HPIVC to set up a new production management course which is compulsory for third-year students. In addition, HPIVC has started providing short-term courses and technical advice on production management for local SMEs in the Hai Phong area. Currently, HPIVC is preparing to launch the second project with KITA for further enhancement of production management among HPIVC lecturers and local SME managers.

Ho Chi Minh City Vocational College (HCMCVC) started a grass-roots project with Kawasaki City Government in 2013. This project aims to improve HCMVC lecturers and students' knowledge and skills in precision machining, in particular for **press die manufacturing**. Through the training course organized by Japanese experts, HCMCVC students and lecturers are learning the 5S, business manners, machine parts assembly and finishing, and press die manufacturing. The course, which mainly targets third-year students, has been carried out as a part of CNC machining courses at the vocational college level.

(2) Develop More Short-term Training Courses for Company Employees and Students

To make significant changes in the curriculum beyond their discretion, TVET institutions may need to go through a lengthy process in obtaining approval from the central government. In this case, an alternative for TVET institutions is to formulate more short-term training courses either for employees or students, in order to let their training programs dynamically adapt to the skills needs of industry. Through development and implementation of short-term training courses, TVET institutions will be able to accumulate knowledge and results which are needed to convince the relevant authorities of the necessity of improving the curricula of regular courses (see Box 14).

Box 14. HaUI's Tailor-made Training Courses for Enterprises

This is another example of step 5 of Figure 5. Good results from the machinery maintenance courses gave HaUI further chances to develop tailor-made training courses for individual enterprises. In July 2012, HaUI provided a short-term course on machinery maintenance for Showa Denko Rare-earth Vietnam, customizing the content of the courses based on their needs. Utilizing the extra time available in the low production season, Showa Denko intended to improve the skills and knowledge of their maintenance team members for further productivity improvements. In addition, HaUI provided an on-site short-term course on basic machining center operation for Nagatsu Vietnam in April 2012. Nagatsu asked HaUI to provide training for their new members, not only because their senor staff did not have enough time for training but also as the management wanted to improve their internal training programs by studying the content and teaching methods of HaUI's training courses. Through these training courses, HaUI lecturers were able to learn the skills required for entry-level technicians through interaction with trainees and managers.

Proposed Industry Actions

(1) Provide TVET Institutions with More Information on Employees' Training Needs

Enterprises should actively transmit information regarding skills needs, in particular their interests in employee training courses, to TVET institutions. Unfortunately, there seems to be a prevailing image among enterprises in Vietnam that TVET institutions have insufficient capacity. However, enterprises may be still able to optimize employee training programs through an efficient division of labor with TVET institutions. By utilizing the lecturers and training facilities of TVET institutions for skills upgrade training, they do not need to slow down production operations for employee training. An Increase in external training opportunities will create no harm for enterprises, because it will give them more options for skills development.

Proposed Government Actions

(1) Assist TVET Institutions in Improving Training Programs in a Timely Fashion

The Government should consider how to assist TVET institutions in updating curricula in a timely fashion according to the skills required by industry. Providing more discretion to change the curricula or contents of subjects is one way. However, many TVET institutions may not utilize their discretion in their current capacity even if it is increased. Thus, it is also important to strengthen TVET institutions' capacity to improve training programs. Disseminating good examples of training program improvement would help TVET institutions, in particular small and medium-sized ones with less capacity to develop linkages with industry.

Furthermore, the Government should review the mechanism to improve the standard curriculum frameworks, which they may retain under their control to certain extent in any case. In order to reflect up-to-date skills demands in the curriculum frameworks, it is necessary to consult with the group of employers, from both FDI and local enterprises in relevant sectors.

(2) Develop Schemes to Encourage Enterprises to Provide More Employee Training

The Government should encourage enterprises, in particular Vietnamese ones, to enhance employee training by providing appropriate incentives. This would indirectly lead to the expansion of partnerships with TVET institutions. The Government has already added a tax exemption for training costs in the Law on Vocational Training, but it is not fully in effect yet [13]. They should prepare a decree or circular to enforce this scheme.

The establishment of a skills development fund, which has been implemented in other Association of Southeast Asian Nations (ASEAN) countries such as Singapore and Malaysia, may be another option. In Malaysia, the Human Resource Development

13. Refer to Article 55, Section 5 of the Law on Vocational Training (Vietnam National Assembly 2006).

Fund (HRDF) operates on the basis of a levy/grant system. Employers who have paid the levy qualify for training grants from the fund to defray or subsidize training costs for their Malaysian employees[14] . Nonetheless, best practices in other countries may not always work in Vietnam. The Government needs to carefully consider what kind of scheme will be suitable for Vietnam in its economic, social, and institutional context, in close partnerships with industry[15]

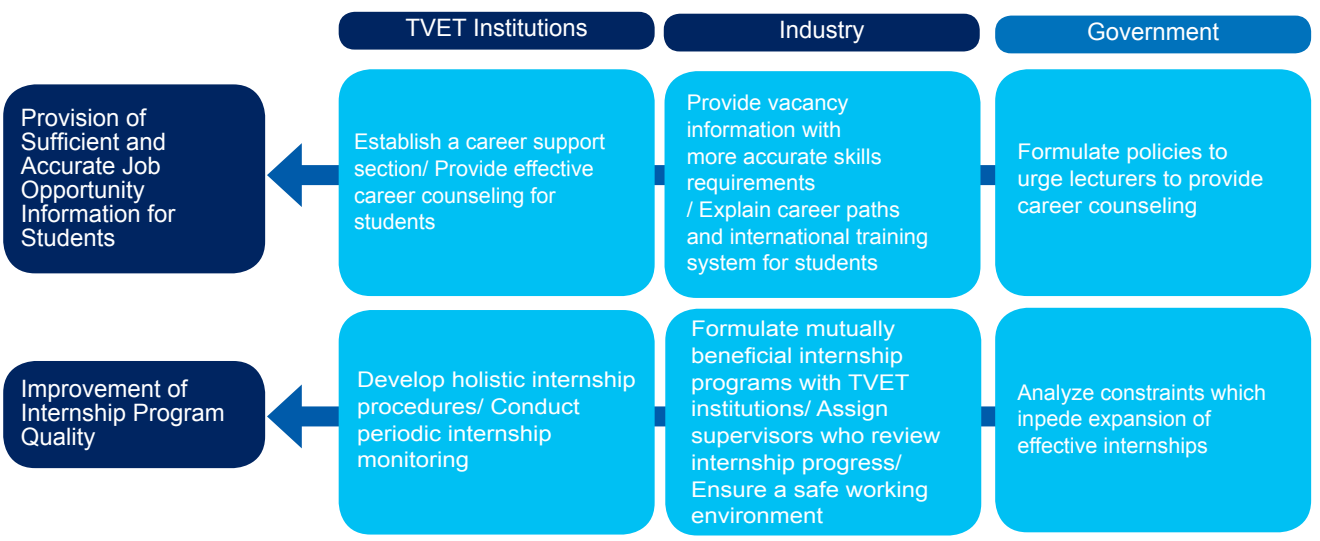
Furthermore, the Government may need to consider providing special incentives for SMEs. Some of them do not have sufficient internal training capacity, but also hesitate to send trainees to external training programs due to limited financial resources for training. For example, the Government of Japan provides employers with training subsidies through the Career Development Promotion Grant, prioritizing SMEs[16].

4.3. Actions Required for Expansion of Employment Support System

Some TVET institutions have started introducing employment support activities, but these activities have not yet shown enough effectiveness. The first immediate concern is that few TVET institutions are able to provide students with basic information related to job opportunities and career paths. Another immediate concern is the quality of internships. Internships are great opportunities to learn whether companies or occupations are suitable. However, a mechanism to assure the quality of internship programs has not been developed in most TVET institutions. Therefore, we propose that TVET institutions, industry and the Government undertake the following actions, aiming to: (i) provide sufficient and accurate job opportunity information for students; and (ii) improve the quality of internship programs (also see Figure 13 for the summary of actions).

We suggest that **TVET institutions and enterprises take co-leadership in improving an employment support system**. TVET institutions are responsible to assist their students in obtaining a suitable job. On the other hand, the recruitment of competent technicians should be the most immediate concern of enterprises regarding skills development. TVET institutions and enterprises should actively approach each other in order to achieve the above targets, with support from the Government.

Figure 13. Actions Required for Improvement of Employment Support System



4.3.1. Provision of Sufficient and Accurate Job Opportunity Information for Students

Proposed TVET Institutions Actions

(1) Establish a Career Support Section with Sufficient Manpower

14. Manufacturing companies, which employ more than 50 workers or employ more than 10 workers and have capital of more than RM 2.5 million, contribute an amount equivalent to 1% of an employee's monthly wage to this fund. The remaining companies contribute an amount equivalent to 0.5% of an employee's monthly wage. Refer to: MIDA (2005).
15. The implementation of a national Training Fund was also discussed in Vietnamese-German Development Cooperation and GIZ (2012), p.13.
16. Refer to the website of the Ministry of Health, Labour, and Welfare.

In order to provide more sufficient and accurate job opportunity information for their students, TVET institutions should establish a career support section with sufficient manpower. Some TVET institutions have already established career support sections, but they are not fully functioning yet due to a lack of manpower and information. A career support section should provide all students with up-to-date vacancy information and data on where graduates are working.

In parallel with the development of a career support section, it is proposed that TVET institutions establish an employment support committee where representatives from various departments and faculties can share employment-related information. This is because enterprises sometimes contact each faculty directly and not through a career support section. Without this inter-faculty committee, information may be stuck in one faculty, even though it may be also useful for others.

(2) Provide Effective Career Counseling for Students

TVET institutions should encourage their lecturers to provide effective career counseling for individual students, convincing them that the recruitment results of graduates is the most important indicator for measuring the effectiveness of their training programs. At this moment, many lecturers do not consider that assisting students in getting suitable jobs is their responsibility.

In addition, lecturers may hesitate to provide career counseling, because they do not have sufficient employment-related information. Therefore, the management of TVET institutions should help lecturers obtain the necessary information by conducting surveys on the employment situations of graduates, collecting and summarizing current vacancy information, and giving them the opportunity to learn business and technology trends through company visits. A career support section such as the one proposed above may collect and provide lecturers with some of those kinds of information.

Box 15. Trial Implementation of Career Counseling by HaUI and Remaining Challenges

Career counseling is an important element of an employment support system. Through career counseling, students will obtain useful information for their future career development and get motivation for studying. Furthermore, the rapport between students and lecturers developed through career counseling will serve as a catalyst for other employment support activities. Therefore, HaUI decided to implement a career counseling system in VJC on a pilot basis under the HaUI-JICA Project Phase II.

Through several rounds of discussions with VJC lecturers, it was found that VJC lecturers, and HaUI lecturers in general, do not have sufficient capacity to provide career counseling for individual students. Thus, members of the project working group decided to try a group career counseling program at existing regular class meetings. It consisted of activities for self-understanding including occupational readiness tests, job understanding, job search methods, internship preparation, and preparation for job applications and interviews.

This trial produced some achievements including the capacity development of selected VJC lecturers, but HaUI has still only partially implemented its career counseling. Lecturers are not sufficiently motivated to provide career counseling and do not have sufficient information. A stronger commitment from top management, improvement of the employment-related information system, and continuous training of counseling skills for lecturers are needed to ensure career counseling functions better.

Proposed Industry Actions

(1) Provide Vacancy Information with More Accurate Skills Requirements

Enterprises should provide job vacancy information with more accurate descriptions of required skills and knowledge. It is sometimes seen that vacancy information issued by enterprises do not have sufficient descriptions of required skills and knowledge.

Accurate job descriptions and required skills and knowledge will help TVET institutions find appropriate candidates for the

advertised positions. In addition, vacancy information is very useful and a practical reference from which TVET institutions and their students can learn what skills and knowledge enterprises require. In order to encourage enterprises to provide more detailed vacancy information, TVET institutions should also prepare a template of a job vacancy information sheet which specifies what kind of information they need

(2) Explain Standard Career Paths and Internal Training System for Students

On the occasion of company introduction seminars or any other events in TVET institutions, enterprises should explain career paths, required skills and knowledge at each level of a position, and the internal education and training system. This will enable students and lecturers to understand requirements for their potential future career and the skills they may need to acquire in the future. Understanding long-term career development will prevent job hopping at the early stage of careers, which often happens when workers do not have a clear idea on what their future career paths are like.

Proposed Government Actions

(1) Formulate Policies to Urge Lecturers to Provide Career Counseling

The Government should start formulating policies to urge lecturers to provide active career counseling for students. In fact, the Vocational Training Development Strategy 2011-2020 proposed to increase career counseling and to develop a section to provide career counseling[17] . However, those policies have not been realized in most TVET institutions.

First of all, it is necessary to make lecturers aware of the importance of providing career counseling for students through pedagogy training programs. Furthermore, the Government needs to encourage lecturers to participate in continuous career-counseling-skills training programs, because the development of career counseling skills will be a long-term endeavor. In Japan, the Government encourages lecturers of TVET institutions to participate in continuous training, develop various tools and guidebooks, and even take a national skills test in career counseling[18] .

4.3.2. Improvement of the Internship Program Quality

Proposed TVET Institutions Actions

(1) Develop Holistic Internship Procedures

TVET institutions should improve the procedures for formulating, implementing, monitoring, and evaluating internship programs. Many TVET institutions seem to rely too much on individual lecturers for the development and implementation of internship programs. In order to strategically negotiate with enterprises for the formulation of mutually beneficial internship programs, TVET institutions should have a standard internship proposal format which stipulates the goals of internships, required working conditions, duties of relevant parties, and the procedures from formulation to evaluation (see Box 16).

(2) Conduct Periodic On-site Internship Monitoring

TVET institutions should assign lecturers to conduct on-site monitoring periodically, at least three times at the beginning, middle, and end of programs. This will not only help them check the effectiveness of programs but also provide opportunities to learn about up-to-date technologies and business trends of companies. In addition, the monitoring reports should be shared at least within the faculty or even within the institution, in order to share the information on how the enterprises organize internship programs.

Proposed Industry Actions

(1) Formulate Mutually Beneficial Internship Programs in Cooperation with TVET Institutions

Enterprises should formulate mutually beneficial internship programs in close cooperation with TVET institutions.

17. Refer to the Vocational Development Strategy for the period of 2011-2020, Article 1. III. 8.
18. Refer to the website of the Ministry of Health, Labour, and Welfare.

Representatives from both sides should have sufficient discussions in order to formulate effective internship programs. While lecturers need to specify the skills which they want students to learn, enterprises should assure that students will learn those skills during internships.

(2) Assign Supervisors who Carefully Review Internship Progress

Enterprises should assign supervisors who will regularly monitor the progress of internships. The supervisors should read and make comments on the daily or weekly reports submitted by interns. Then, they should adjust the content of internship programs, according to students' performance.

(3) Ensure a Safe Working Environment

Enterprises should make sure the working environment for interns is safe. They should discuss the arrangement of safety procedures and equipment with TVET institutions prior to internship programs as needed. In particular, local enterprises need to pay more attention to ensure a safe working environment for interns.

Box 16. A Frequently Discussed Issue in Formulating Internship Programs

TVET institutions and enterprises need to discuss various issues when they formulate internship programs including the arrangement of transport, accommodation, meals, and working attire. Among these issues, the most sensitive one is internship remuneration. In general, students and TVET institutions ask for remuneration, but enterprises are hesitant to accept their request. Regarding internship programs under the HaUI-JICA Project Phase II, a typical compromise is: (i) students will not ask for remuneration if enterprises will provide comprehensive training programs; or (ii) enterprises should pay remuneration if they treat interns like workers during the majority of the internship period. If an internship goes to either extreme, such as fully paid participation in training courses (with no obligation to work) or unpaid labor with few opportunities for learning, it is not considered mutually beneficial. This kind of strategy may vary due to organizational strategies. Thus, the management of TVET institutions should make the policies clear and, not simply rely on negotiation by individual lecturers.

Proposed Government Actions

(1) Analyze Constraints which Impede Expansion of Effective Internships

The Government should analyze what constraints enterprises, TVET institutions, and students are facing, in order to increase the effectiveness of internship programs. For example, TVET institutions and companies sometimes face difficulties in agreeing to cost sharing of some items such as transportation, accommodation, and personal safety items. In addition, some enterprises report that the duration of the internship is often too short and TVET institutions request that they accept a large group of students. On the other hand, TVET institutions choose not to send students for a lengthy period of time and prefer to send a large number of students to one company, because doing so simplifies the administrative and management tasks which need to be accomplished in order to implement the internship program. With regard to these constraints, the Government needs to provide policy supports as needed, in order to expand effective internship programs.

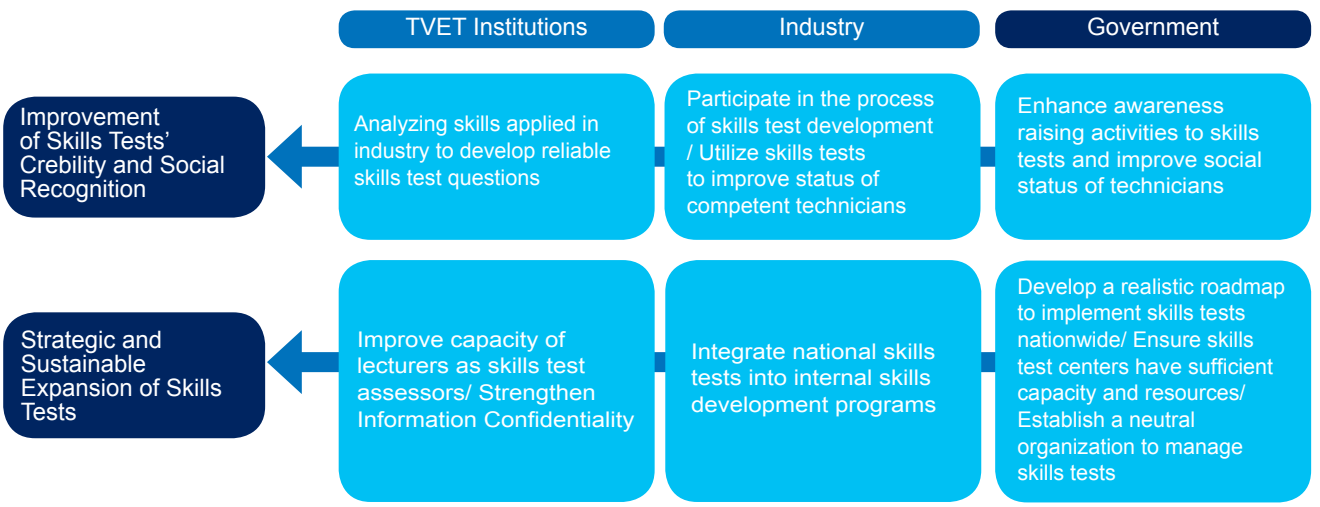
4.4. Actions Required for Improvement of Skills Evaluation System

The Government has already implemented national skills tests in some trades as described in Box 7 and Box 8. Although there has been good progress, the national skills tests are still considered to be at the pilot level. Limited numbers of enterprises recognize national skills tests. This is in part because many enterprises are not aware of or do not trust benefits of national skills tests.

In order to attract more participants, the credibility and the social recognition of skills tests should be improved. Then, the frequency and the venues of skills tests should be gradually extended in a strategic and sustainable way. This will enable employers and employees to plan on when and where they will be able to take skills tests. To achieve these targets, we propose the following actions be taken by TVET institutions, industry, and the Government (also see Figure 14 for the summary of actions).

We recommend **the Government take leadership in improving a skills evaluation system**. Certainly TVET institutions should play an important role to implement skills tests and enterprises should actively utilize them for their internal skills upgrading. Nonetheless, the Government should have ultimate responsibility for developing and implementing national skills tests, since the objective is a national system.

Figure 14. Actions Required for Improvement of Skills Evaluation System



4.4.1. Improvement of Skills Tests' Credibility and Social Recognition

Proposed TVET Institutions Actions

(1) Carefully Analyze Skills Applied in Industry to Develop Reliable Skills Test Questions

TVET institutions, which often act as national skills test centers, should carefully analyze skills applied in industry when they develop skills standards and skills tests. This is the way to attract participants from more enterprises. In particular, when they develop practical test assignments and assessment criteria, it is necessary to examine the needs of both foreign-invested and local enterprises, visiting or inviting their experts as needed. TVET institutions may learn a lot by studying the assignments of companies' internal skills tests.

Proposed Industry Actions

(1) Actively Participate in the Process of Skills Test Development

Enterprises should actively participate in the process of skills test development and provide input for the formulation of effective skills tests. Even with maximum effort, it is impossible for TVET institutions alone to develop skills test questions which satisfy industry needs. Therefore, the contribution from enterprise experts is needed in order to develop reliable skills test questions.

(2) Consider Utilizing Skills Tests as a Means to Improve the Status of Competent Technicians

Part of the reason that some technicians leave their jobs quickly may be their dissatisfaction with their social and economic status in companies. In order to retain competent technicians, enterprises may utilize skills tests to develop a human resources management system to give them fair social and economic status. In particular, SMEs who may not have the capacity to develop internal skills tests for each occupation could use the skills tests for this purpose (see Box 17).

Box 17. How Do Japanese Enterprises Utilize Skills Tests?

In Japan, many companies encourage their employees to take national skills tests. This practice is applied not only at large companies but also at parts suppliers, many of which are SMEs. They utilize national skills tests for employees' skills development, which will lead to quality and productivity improvements. They also display the names of skills certificate holders inside factories, in order to encourage employees to improve their skills and increase their status in companies. Furthermore, the fact that they have more skills-test-certificates holders improves their reputation in the minds of their customers.

Proposed Government Actions

(1) Enhance Awareness Raising Activities to Attract More Enterprises to Skills Tests and to Improve the Social Status of Technicians

Recently the Government has been issuing various policies and guidelines regarding the implementation of national skills tests and expanding training for skills tests assessors. As a next step, the Government should encourage enterprises to not only participate in skills tests but also become involved in their development process by conducting various awareness raising activities. In particular, it is necessary to convince Vietnamese enterprises of the benefits of skills tests. While foreign-invested companies have utilized skills evaluation systems in their home countries and understand the benefits, many Vietnamese companies seem to be afraid that their employees will leave the company after getting skills certificates. The Government needs to promote skills tests as a way to improve product quality and promote business expansion. Awareness raising activities can be more effective if the Government cooperates with business associations or large assemblers who can disseminate information to their suppliers through supply chains (see Box 18).

Furthermore, the Government may need to conduct more activities in raising public awareness on the issue of how skilled technicians contribute to industrialization, in order to improve the social status of technicians. A shift in social value would indirectly urge Vietnamese companies to participate in skills tests. Providing awards for highly skilled technicians would be one option, but the selection procedure should be fair and transparent.

Box 18. Adoption of National Skills Test by a Leading Vietnamese Company

In June 2014, the national skills test on conventional turning machine operation was organized at Truong Hai Automobile Company (THACO)'s Chu Lai factory in Quang Nam Province. Twenty people, including 12 technicians from THACO and 8 lecturers from TVET institutions, participated in the skills test, which is equivalent to the third level of the Japanese skills test.

THACO is a leading Vietnamese automobile manufacturer which produces not only own-brand commercial vehicles but also passenger vehicles as an original equipment manufacturer (OEM) of foreign companies such as KIA and Mazda. They started their business from assembling automobiles, but are gradually increasing internal parts production. Thus, THACO decided to adopt the skills test in order to improve their product quality and increase their competitiveness in the global supply chain. Moreover, THACO considers that the skills tests can be a useful evaluation criterion of their employees and a tool to encourage them to improve their skills. THACO is planning to conduct another skills test on conventional turning machine operation in September 2014, and is going to start skills tests in more trades in the future. This is a good example of a large Vietnamese company which adopted national skills tests and realized its benefits. The Government of Vietnam should examine what made THACO become interested in skills tests and utilize this case for promoting skills tests to other Vietnamese companies.

4.4.2. Strategic and Sustainable Expansion of Skills Tests

Proposed TVET Institutions Actions

(1) Improve Capacity of Lecturers as Skills Test Assessors

TVET institutions should develop the capacity of lecturers who work as skills test assessors. In order to conduct reliable skills tests, TVET institutions must train an entire group of qualified assessors, not only a few good ones. To achieve this goal, TVET institutions frequently need to organize technology transfer training where new assessors can learn from experienced ones and they can unify their understanding on procedures and assessment criteria.

(2) Strengthen Information Confidentiality

TVET institutions should pay extra attention to information confidentiality as the size and frequency of skills tests increase. The awareness of this issue is slightly weak in Vietnam. All TVET institutions which act as skills test centers should make sure that confidential information about skills tests is properly secured and never shared with other lecturers and staff in the institution.

Proposed Actions for Industry

(1) Consider Integrating National Skills Tests into Internal Skills Development Programs

Enterprises should consider sending their employees to skills tests regularly and continuously, as part of their internal skills development programs. In order to pass skills tests, examinees need to study a broader range of knowledge as well as practical knowledge and skills which apply directly to their daily operations. In addition, skills tests will promote competition among employees because nobody wants to be left out. This will make employees develop their capacity, which will contribute to further productivity and quality improvement.

Proposed Actions for the Government

(1) Develop a Realistic Roadmap to Implement Skills Tests Nationwide

The Government should make a realistic roadmap for the development of a sustainable management and financial mechanism for conducting reliable skills tests nationwide on a regular basis. Otherwise, enterprises cannot utilize skills tests as a part of their internal skills development programs and human resource management practice. Pilot activities are needed, because skills test institutions cannot be developed at one time. Nonetheless, the positions and targets of pilot activities should be clearly identified in the roadmap.

(2) Ensure National Skills Test Centers Have Sufficient Capacity and Resources

The Government needs to ensure that skills test centers have sufficient equipment and qualified assessors, in order to maintain the trust of enterprises. The Government, or an organization which manages skills tests in the future, should carefully set nationwide examination fees, neither discouraging enterprises by making the fees too high nor forcing TVET institutions to take a loss due to insufficient budget support because of low examination fees. It is also necessary to provide TVET institutions with sufficient budget supports for those skills tests which require them to make capital investments.

(3) Consider Establishing a Neutral Organization to Manage Skills Tests

In the long run, the Government should consider establishing a neutral organization which ensures fair, reliable and consistent skills tests by managing the development of skills test questions and supervising the implementation of skills tests. In the current system, skills test centers need to manage a wide range of issues from the development of test questions to the setting of examination fees. Nonetheless, this system may not be sustainable, because skills test centers may not have sufficient capacity to manage all of these tasks. On the other hand, GDVT, which currently manage national skills tests, will not be able to take care of all administrative issues related to skills tests. Thus, it is ideal to establish a neutral organization which manages national skills tests. For instance, in Japan JAVADA administers national skills tests, in coordination with the Ministry of Health, Labour, and Welfare which develops skills standards and the local vocational ability development associations which are set in all prefectures and implement skills tests in cooperation with TVET institutions and enterprises.

4.5. Monitoring Results of Actions

The proposed actions should enable TVET institutions to implement the three strategic solutions explained in Section 3, in partnership with industry and the Government. Then, they should be able to reduce skills mismatch and provide positive impacts for stakeholders in different ways. Enterprises should be able to improve productivity, with a lower level of skills shortages and skills gaps. TVET institutions should be able to achieve a higher employment rate for graduates and attract more competent students if they improve their image. In addition, TVET students should be able to obtain suitable jobs and reasonable economic and social status. Then, all of these factors will help Vietnam to advance to the next stage of industrialization with higher value added processes and higher skills levels.

In order to review the progress for implementing these actions, monitoring indicators are needed. It is difficult to find a perfect indicator to measure the above effects, but we propose the following proxy indicators, in particular for monitoring achievement at the level of enterprises, TVET institutions, and students.

(i) Employment Rates of TVET Graduates

This is the indicator which TVET institutions should start measuring immediately. TVET institutions should know whether their graduates have acquired the skills required by industry. In addition, it is very important to know which enterprises employ these students work. This information will help TVET institutions promote their training outputs to employers and prospective students.

Although some TVET institutions have conducted employment status surveys on a trial basis with technical assistance from foreign aid organizations, most of them do not have accurate data of their graduates' employment rate[19]. Some TVET institutions have tried to conduct employment status surveys, but have not received sufficient responses from their graduates. This is in part because TVET institutions have not developed rapport with their students. In general, the more support students receive from schools for job hunting, the higher the answer rate will be for employment status surveys. Therefore, the development of an employment support system is important.

In the short run, it would be more realistic for TVET institutions to begin implementing the employment status survey when students graduate, because they can urge students to provide information face to face. Then, the accuracy of these data should be reconfirmed by asking enterprises how many of their graduates are working during company visits. In the long run, it would be ideal for TVET institutions to conduct a tracer survey within a certain amount of time after graduation, such as six months, considering that many students start looking for a job after graduation. In order to make this survey successful, TVET institutions need to develop rapport with their students by providing effective employment support.

Certainly, this indicator is not a perfect indicator. The employment rate does not measure whether or not students obtained suitable jobs. In order to find out this information, TVET institutions need to elaborate the way to design a questionnaire and analyze data. For example, one way is to include a question asking whether the students feel that they can utilize skills and knowledge learned in schools on the job. Another issue is that this indicator will not show how long graduates stay at enterprises. The retention rate is affected not only by skills issues but also other elements of companies' human resource management. Thus, the retention rate may need to be monitored and analyzed on a project basis in partnership with enterprises and TVET institutions.

(ii) Skills Shortages and Skills Gap Indicators[20]

Skills shortages and skills gap indicators are more sophisticated ways to indicate overviews of skills mismatch situations. However, it would take some more time to develop the mechanism to collect the relevant data in Vietnam.

Skills shortages can be measured by observing the aggregated data of skills shortage vacancies, which means that enterprises cannot fill a position because the job applicants lack necessary skills. In order to measure this indicator,

19. HaUI conducted an employment status survey during graduations in 2011 and 2012 under the HaUI-JICA project (Mori et al 2013). In addition, the Higher Education 2 Project supported by the World Bank conducted tracer studies in cooperation with about 24 universities (World Bank 2013).
20. Refer to UKCES (2010) for details of definitions of terms. Also refer to UKCES (2014) and Felstead et al (2007) for an example of a skill survey and analysis of skill shortage and gap.

the Government needs to develop survey tools to collect skills shortage vacancy data from enterprises, asking them to separate it from other hard-to-fill vacancy data, because not all recruitment difficulties are caused by lack of skilled workers[21] . In addition, enterprises need to identify the required skills or qualification level for skills shortage vacancies, so that it can be compared with the skills or qualification supply.

Skills gaps, which represent the skills mismatch within the internal labor markets of enterprises, are usually measured by observing employers' perception on whether their employees are fully proficient or competent in their jobs. In order to grasp the level of skills gaps, the Government needs to develop survey tools to collect skills gap data from enterprises by clearly defining what skills mean.

As an immediate action, TVET institutions should start measuring the employment rate in cooperation with enterprises as soon as possible. The Government should also periodically collect nationwide data on the employment rate of new graduates and publish the results every year. Then, it is recommended that the Government consider developing a mechanism to collect skills shortage and skills gap data. These indicators should be monitored periodically while the nation moves toward its goal of full industrialization by 2020.

5. Summary and the Way Forward

Reduction of skills mismatch is becoming increasingly important for further industrialization in Vietnam. It seems that more TVET institutions are becoming aware of this issue and have begun realizing the importance of meeting industry skills demands.

However, these institutions need support from enterprises and the Government in order to materialize the "demand-driven" training concept. Skills mismatch can be reduced only through tripartite partnerships between TVET institutions, industry, and the Government, which should aim to not only improve the supply-side capacity but also make skills demands more tangible and usable for the supply side.

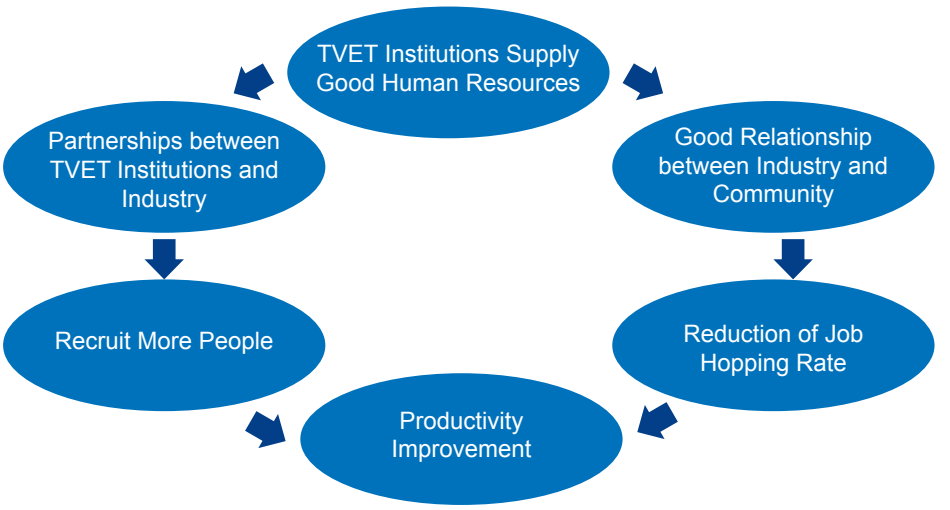
First of all, TVET institutions should be more proactive in determining the skills needs of enterprises around them. Then, in the process of converting industry demands to training programs, they need to take into account the dynamic nature of skills needs and students' interests in skills and careers. Enterprises should open communication channels to TVET institutions and actively provide them with skills demands information. In addition, they also need to reconsider their current and future skills needs, understanding that TVET is not only for immediate job security but also life long career development. The Government should provide policy support to encourage, not force, partnerships between TVET institutions and industry. Regarding the development of a skills evaluation system, the Government should take leadership, because no other stakeholders can manage to develop and implement this nationwide system. Furthermore, the skills policies should aim not only to improve the skills supply but also stimulate skills demands, in close coordination with industrial policies. Increasing skills supplies would not contribute to economic growth and industrialization unless they are absorbed and utilized by industry.

This policy paper aims to provide selected tangible solutions to reduce the skills mismatch, mainly based on lessons learned from JICA's projects for industrial human resource development. It may not cover all the issues, in part because our intention is not to make long wish lists but to explore selected issues more deeply and indicate hands-on solutions derived from our field experiences. We hope that more TVET institutions and enterprises strengthen their partnerships and the Government provides more effective policy support in reference to our proposals. In order to scale up the previous achievements, JICA is currently assisting HaUI to transfer their knowledge and experiences to other TVET institutions (see Box 19).

Lastly, the tripartite partnership for skills development should be extended not only in the areas around large cities but also to various provinces which are recently receiving more FDI (see Box 20). Implementing these partnerships in the provinces will promote a positive spiral of employment generation and industrialization at the local level (see Figure 15). This will contribute to further industrialization in Vietnam.

21. Some surveys tried to measure skill shortages (see World Bank 2013). However, they are mainly based on the subjective impression from employers.

Figure 15. Positive Spiral of Local Industrial Human Resource Development



Box 19. Transfer of HaUI's Knowledge and Technology to Other TVET Institutions

The Project for Strengthening Training of Trainers (TOT) Functions at Hanoi University of Industry (HaUI-JICA Project Phase III) was launched in June 2013. The Project aims to transfer HaUI's knowledge and experience acquired through the previous two projects to other TVET institutions, focusing on the fields of machining (Machining Center operation and mechanical maintenance), electric control (electric system maintenance and Programmable Logic Control (PLC) network), and electronics (PLC and inverter control and PIC programming). It also assists HaUI in transferring other knowledge and skills such as the implementation of industry needs surveys, 5S, and skills test development and implementation. In the first year of the project, HaUI has provided intensive on and off-the- job -training for 4 members from Technique and Technology College (TTC) Hanoi, with technical assistance from JICA experts. From the second year onward, HaUI will provide TOT programs for more TVET institutions, in particular for those who may be beneficiaries of an upcoming JICA ODA Loan project for capacity improvement of selected TVET institutions.

Box 20. The Project for Heavy-Chemical Industry Human Resource Development in Thanh Hoa

The Project for Human Resources Development for Heavy-Chemical Industry at the Industrial University of Ho Chi Minh City (IUH) was launched in November 2013. The Project was formulated in conjunction with the construction of the second oil refinery plant in Thanh Hoa, which plans to start operation from 2017. The Project aims to assist IUH, in particular its branch campus in Thanh Hoa, in supplying creative and practical production engineers who can ensure the safe and productive operation of large heavy chemical plants through the capacity development of IUH lecturers and improvement of relevant training programs. This Project is expected to develop a positive spiral of development of industrial human resources and local industrialization in Thanh Hoa. It will be implemented in close cooperation with several enterprises including Idemitsu Kosan, which is one of the major investors of the oil refinery plant in Thanh Hoa.

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List of Annexes

A. Summary of Proposed Actions

Annex A. Summary of Proposed Actions

Subject	TVET Institutions	Industry	Government
Training Process Management Leader: TVET Institutions	**Target 1. Enhancement of Interaction between Industry and TVET Institutions**		
	(1) Develop a fair evaluation system and incentive mechanisms to encourage lecturers to visit enterprises.	(1) Open communication channels with TVET institutions.	(1) Increase opportunities to nurture partnerships between TVET institutions and enterprises.
	(2) Provide lecturers with training on appropriate behaviors in communicating with enterprises.	(2) Encourage intermediate organizations to scale up partnerships with TVET institutions.	
	Target 2. Promotion of Dynamic Training Program Development		
	(1) Improve training programs by fully utilizing their discretion to revise curricula.	(1) Provide TVET institutions with more information on employees' training needs.	(1) Assist TVET institutions in improving training programs in a timely fashion
	(2) Develop more short-term training courses for company employees and students.		(2) Develop schemes to encourage enterprises to provide more employee training.
Employment Support System Leaders: TVET Institutions and Enterprises	**Target 1. Provision of Sufficient and Accurate Job Opportunity Information for Students**		
	(1) Establish a career support section with sufficient manpower.	(1) Provide vacancy information with more accurate skills requirements.	(1) Formulate policies to urge lecturers to provide career counseling.
	(2) Provide effective career counseling for students.	(2) Explain standard career paths and internal training system for students.	
	Target 2. Improvement of the Internship Programs' Quality		
	(1) Develop holistic internship procedures.	(1) Formulate mutually beneficial internship programs in cooperation with TVET institutions.	(1) Analyze constraints which impede expansion of effective internships.
	(2) Conduct periodic on-site internship monitoring.	(2) Assign supervisors who carefully review internship progress.	
		(3) Ensure a safe working environment.	
Skills Evaluation Leader: the Government	**Target 1. Improvement of Skills Tests' Credibility and Social Recognition**		
	(1) Carefully analyze skills applied in industry to develop reliable skills test questions.	(1) Actively participate in the process of skills test development.	(1) Enhance awareness raising activities to attract more enterprises to skills tests and to improve the social status of technicians
		(2) Consider utilizing skills tests as a means to improve the status of competent technicians.	
	Target 2. Strategic and Sustainable Expansion of Skills Tests		
	(1) Improve capacity of lecturers as skills test assessors.	(1) Consider integrating national skills tests into internal skills development programs.	(1) Develop a realistic roadmap to implement skills tests nationwide.
	(2) Strengthen information confidentiality.		(2) Ensure national skills test centers have sufficient capacity and resources.
			(3) Consider establishing a neutral organization to manage skills tests.

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