

Linking Vocational Training with the Enterprises – Asian Perspectives



On behalf of
Federal Ministry
for Economic Cooperation
and Development





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On behalf of
Federal Ministry
for Economic Cooperation
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Foreword

Co-ordination mechanisms between technical and vocational education and training (TVET) and the enterprises in different economic sectors are eminently important for the relevance of TVET for both employers and job seekers. Of course, such mechanisms, linkages and “bridges” between the training providers and the companies cannot follow one uniform design or format in different cultures and economic circumstances and under different social requirements. In addition, there are a multitude of stakeholders in training, who have varying and sometimes conflicting interests, objectives and priorities and the stakeholders in different countries are not everywhere the same. Hence, the “bridging” exercises cannot follow a single blue-print in different countries.

As Castro and Alfthan several years ago have convincingly shown, solutions to TVET problems are not adopted by countries randomly or at will (Castro & Alfthan, 2000. Vocational Education and Training: International Differences. In: Castro, Claudio de Moura. Vocational Training at the Turn of the Century; pp. 15-27. Frankfurt/Main: Peter Lang.). Instead, they usually have deep roots in the country and attempts to change roles and styles of operation, which conflict with their nature are likely to fail. National conditions and cultural values have to be taken into account and probably those experiments were most successful, which have tried to enrich and improve the existing TVET system incrementally, sometimes by infusing new home-grown ideas into the existing system, sometimes by making use of foreign concepts in an adapted form.

In 2007 the Vietnamese General Directorate for Vocational Training (GDVT) organized a workshop in order to come closer to an appropriate linkage building between training providers and companies of various sectors of the Vietnamese economy. One of the leading ideas was to scrutinize the own experiences again and to examine the experiences of neighbouring and of such countries which have some cultural features in common with Vietnam: Thailand, the Peoples’ Republic of China and the Republic of Korea. In addition, experts from a country, well-reputed for linking company-based and school-based TVET, namely Germany, were invited, which enabled the participants of the workshop to take part in a captivating dialogue between different cultures about the approaches and the solutions found in Asian and European circumstances. This offers food for thought about how solutions adapted to the Vietnamese conditions might look like.



We would like to thank the General Directorate for Vocational Training (GDVT) of Vietnam and all the presenters for sharing their experiences with the participants of the workshop and also for allowing us to convey their views to an international “audience”. We are convinced that the experiences presented in this booklet are meaningful for many TVET practitioners working in other contexts and cultures. We sincerely hope that this publication will stimulate debate on sound principles of linkage building between TVET providers and the private sector.

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Preface

In recent years the “Doi Moi” policy of the Vietnamese government has achieved great successes in both, the economic and the social sector: high economic growth, improved social security and stable politics. A contribution to this achievement is the continuous development of the labour force in terms of quality and quantity. The ratio of the trained labour force in percentages of the employed population increases and amounts at present to 26%. During the last ten years, the vocational training sector has recovered and has made considerable progress: a country-wide vocational training provision could be established and the vocational curricula were revised and renewed based on the national frame curricula. The vocational school teachers have reached a high level of qualification and their updated technical skills include advanced technological know-how for the industrial production. An accreditation system has been established, the national skills standards are about to be defined and they will be the basis for training as well as for assessment. The administration system functions well from the central to the local level.

In the nearer future, one of the key duties will be the forging of linkages between vocational training and social demand. Training should become driven by the demand of companies for human resource development on the three qualification levels: primary, secondary and college level. It is a great challenge for the whole vocational training system, which is traditionally school-based, to comply to the Vocational Training Law and to contribute to economic development. Linking the vocational schools with the enterprises, renewing the vocational curricula and making them competency-based, improving teachers competencies, enhancing the material conditions of the vocational schools, improving the acceptance of vocational training in the Vietnamese society, reforming policies and the mechanisms in administration and management of vocational training are the main tasks to make the whole system more efficient and effective.

In this context I highly appreciate the cooperation with InWent/Germany in capacity building for the whole vocational training system of Vietnam for which the workshop “Linking vocational training with the enterprises” is a good example. The contributions to and the discussions in this workshop were a valuable sharing of experiences for the personnel working in the field of vocational training in Vietnam.

I hope the cooperation between InWent and the General Directorate for Vocational Training (GDVT) of Vietnam will continue to contribute to the development of our training system.

Director General of GDVT

Dr. Nguyen Tien Dung



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Mac Van Tien

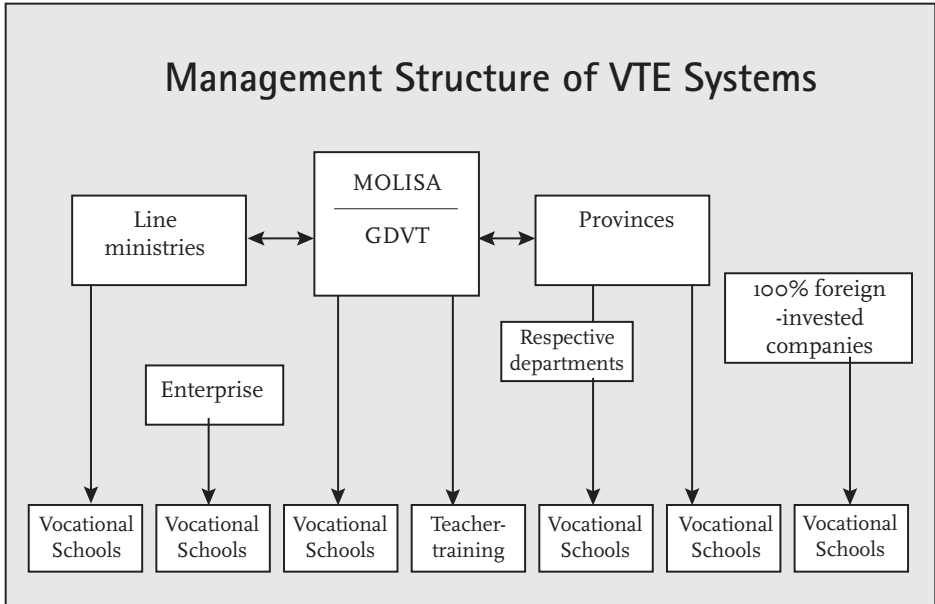
The Situation of Vocational Training and the Linkage between Vocational Training and Enterprises in Vietnam

1. Overview of the vocational training situation in Vietnam

A well-trained labour force plays an important role in the Vietnamese labour structure. Vocational training is different from other training forms, as it aims to equip students with practical skills by allocating 65% - 90% of its curriculum to internships. Additionally, vocational training is associated with real needs and practical labour use. It helps create local jobs, contributes to economic structure transfer, and labour restructuring in rural areas, thus contributing to poverty reduction. In other words, vocational training is closely connected to production and business labour use.

On behalf of the national government, the Ministry of Labour, Invalids, and Social Affairs is currently responsible for government supervision of vocational training and technical teacher training schools throughout the country (two universities, and one college). Having been approved by the Socialist Republic of Vietnam in late 2006 and put into practice in 2007, the Law on Vocational Training stipulates 3 levels of vocational training in Vietnam: primary, secondary, and college. Vocational training schools include: vocational colleges, vocational secondary schools, vocational training, and other vocational training-related centres. Various forms of vocational training comprise full-time training at vocational schools, businesses, as well as other part-time training. The law also stipulates businesses' responsibility for vocational training. In the vocational training system, in addition to schools directly under MOLISA's management, there are schools under the direction of other ministries, enterprises in Industrial Zones, and in traditional handicraft villages (see figure 1).

Figure 1: Management structure of VTE systems in Vietnam

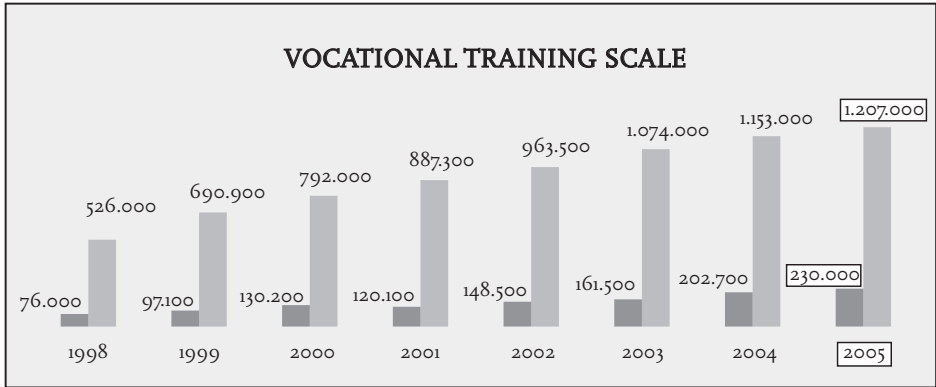


As of late 2006, the vocational training network was composed of 262 vocational schools, nearly 600 vocational centres, more than 800 jobs centres, centres for continuing education, vocational - technical training centres, and many vocational classes in firms, traditional handicraft villages, and more than 200 colleges and secondary schools. In general, the vocational training network has expanded to almost every locality nationwide and initially met the demands of business and labour markets in terms of quality, quantity, sectoral structure, and training levels.

The scope of vocational training has been considerably expanded, as has network development. In 2001 the system had 887,300 enrolled students of which 126,100 were full-time. In 2006 the number went up to 1,340,000 (260,000 full-time trainees) - an increase of more than 2.06 times. The annual average growth rate was 6.5%, in which full-course training increased by 15% per year on average. Up to 2006, trained workers made up 20.2% of the total labour force.

Parallel to this expansion, sector-based vocational training and training capacity have been gradually adjusted to meet labour market needs. Training efforts have been directed toward industries such as telecommunications and electronics assembly which require highly-skilled workers. At the same time, a new set of technological skills - in line with different economic zones' requirements - has also been put into the training schedule. The state's vocational training policy aimed at creating skilled workers for spearhead economic sectors has been realized in

Figure 2: Vocational training scale



many vocational schools. Implementing the amended Law on Education approved in 2005 and the Law on Vocational Training in 2006, the Ministry of Labour, Invalids, and Social Affairs is focusing on secondary vocational and college training. Late 2006 and early 2007 witnessed the establishment of more than 50 vocational colleges founded on the basis of experienced and well-equipped secondary vocational schools with qualified teaching staff. This fundamental step is intended to improve human resource quality, to meet rising business demands, especially with those companies with foreign investment in industrial zones where the use of high technology requires more skilled workers than in any other area.

Thanks to these proactive measures, vocational training quality has been increasingly upgraded, contributing to improved worker quality, economic competitiveness, and economic growth. Practice has shown that it has met the requirements of high-tech enterprises in such sectors as telecommunications, electronics, informatics, etc. Skilled workers are able to master modern equipment and later they become key workers in many enterprises. Some vocational schools have been conditioned to train regional and international technical labourers. Some schools have successfully equipped labourers with 3G-to-6G welding technology which is recognized in other countries. On the other hand, vocational training has been closely linked to labour market needs, contributing to the reduction of unemployment, especially structural unemployment caused by technological advances.

To sum up, vocational training has been gradually gaining ground thanks to sound policies and solutions. The growing vocational training scale has contributed to the increase in the number of trained workers in the work force. It has also helped provide skilled human resources for business in particular, and the economy in general. Further, it accelerates the economic transition and labour restructuring both regionally and nationally. Vocational training quality has changed positively, and has fundamentally met production and labour market's ever-growing demands.

2. The linkage between vocational training and enterprises in Vietnam

2.1. Economic and social background

With stable and high economic growth rates, Vietnam is speeding up its industrialization and modernization process. In the last ten years, its GDP per capita has more than doubled.

The rate of growth of Vietnam's GDP, which is 7.5% on average annually, has been quite high and stable for a long period of time. The period 1991-1995 saw an 8.2% annual average GDP growth rate, and since 1995 it has been 7.5%. Particularly in 2005, the rate peaked at 8.4% (Source: The Statistical Yearbook of Vietnam 2005). In recent years, Vietnamese economic growth has been ranked the second highest in the world (after China). The industrial sector enjoys the highest growth rate, having reached 17.2%; the next is the service sector with 9.1%. Economic growth in those sectors has showed a transfer in economic structure. The GDP in 2005 indicated that the agricultural sector accounted for 20.89%, while the 1991 ratio was 40.5%, and in 1996 it was 27.2%. Also in this period, the industrial proportion of the GDP increased from 23.8% to 41.04%. In the service sector the transfer remained slow with little change in their share of the GDP (from 35.72% to 38.07% over the same period) (Source: quoted)

The state-owned sector still holds the leading position in the national economy. State-owned enterprises have carried out great reforms to improve their efficiency and competitiveness. The state sets the policy on owning enterprises in some key and specific areas. Enterprises where much investment was spent on modern equipment and advanced technology, develop rapidly. In particular, private and foreign-invested enterprises have blossomed and attracted a lot of workers, particularly technical workers. At present, there are nearly 200 industrial parks and export processing zones of all kinds with more than 30,000 enterprises, including more than 1,400 foreign companies with a total registered capital of 57.3 billion USD and actual capital of nearly 29 billion USD. They employ over 1.1 million workers.

As of July 2005, the Vietnamese work force was made up of 42 million people, of which 90% are of working age. The work force structure has changed remarkably in various economic sectors, and has shown a trend toward an increase of employees in industry and services, and a decrease in agricultural, forestry, and fishery. This is represented in the following table:

Table 1: Work force structure in Vietnam per year and economic sector. (Source: quoted)

Sector	1996	2002	2003	2004	2005
Agriculture	69,80%	60,90%	59,04%	57,9%	56,8%
Industry	10,55%	15,10%	16,41%	17,4%	17,9%
Services	19,65%	24,00%	24,55%	24,7%	25,3%

(Source: quoted)

The number of monthly paid employees working for all types of businesses will continue to increase.


2.2. Business and Vocational Training

As a developing country heading toward industrialization by the year 2020, the Vietnamese government has issued a wide range of policies to develop certain businesses. Statistically, the nation has more than 240,000 enterprises (with more than 120,000 newly established enterprises in 2005 and 2006 alone), employing 11 million labourers. They have made a great contribution to Vietnam's economic growth. Particularly, small and medium enterprises alone have generated from 26% to 40% of the GDP, employed 2,6 million to 3 million people, which is equivalent to 49% of the non-agriculture jobs in the rural area, and 26% of the nation's total labour force. Their development is one among the positive factors that help the economy sustain a high and stable growth for a long time. Many businesses, especially foreign-invested ones, have imported modern equipment, advanced technology, and applied modern management skills, which help increase labour productivity and enhance their competitiveness in the market. This enables them to attain better qualified labourers. At the same time, they are able to train employees by themselves for their own production technology. On the other hand, some enterprises, together with vocational schools, have proactively taken some part in training technicians.

The "2001-2010 Education Development Strategy" states that education and training in general, and vocational training in particular, shall be socialized. Therefore, vocational training is not only the state's responsibility but also the business sector's, for a joint effort to improve labour force quality, in order to meet the increasingly high demands and requirements of the new economy. Accordingly, the general tendency now is that enterprises not only train new workers but also retrain (on-the-spot training) others to enhance worker skills in an attempt to keep pace with production and technology changes.

On-the-job vocational training gives workers the opportunity to be trained and to improve their skills directly at their work place. They are trained by veterans of the company/factory or by qualified teachers brought in from training centres. Or they can learn theory at the training centres, and practice at the factory/company. This type of training can also be done in handicraft villages in the form of handing down this tradition from this generation to the next.

Nowadays, on-the-job vocational training is globally a common trend due to its many advantages. On-the-job trained labourers can easily meet a business's practical needs. The knowledge and vocational skills they obtain meet both labourer's and employer's interests. Trainees can attain vocational theory and practice on the equipment used in their factories. Employers also do not have to send workers to outside training bases, so that then their tasks are not interrupted, which in turn reduces costs. In addition, on-the-job training also includes sending trainees to factories to practice on the devices being used, so trainees may apply the knowledge obtained and improve their skills at the same time. This training cooperation has promoted understanding between vocational schools and enterprises. Moreover, the vocational



schools do not have to spend money on purchasing equipment for practice, and trainees therefore learn more quickly. As for businesses, they use the trainees to make new products and groom skilled employees for themselves in the future.

Currently, Vietnam has about 300 vocational training establishments in all economic sectors. This includes 82 vocational schools and 106 vocational training centres. Those establishments actively develop their own training programmes suitable to each enterprise's production and technological features. In addition, these establishments also take part in vocational training for outside labourers. Annually, they train from 85,000 to 90,000 labourers in full-course, and hundreds of thousand people attend short-course training which have increasingly met the demands for technical workers. However, this type of training is still quite new and not every enterprise can apply it.

On-the-job vocational training has also been conducted fairly commonly in handicraft villages and in household businesses. In this case, both trainers and trainees are villagers or family members. However, experience has shown that skills are transmitted only by veteran workers who virtually have no pedagogic skills. Therefore, the quality is very limited and can hardly enable trainees to handle new technology.

Along with changes in the country's economy, foreign investors are flowing into Vietnam. Many well-trained employees are able to use modern facilities in industrial zones and export processing zones. However, a great number of workers have not yet been trained. To meet the needs for better trained employees, some enterprises in industrial zones have provided on-the-job training. In fact, a vocational school training curriculum is not always able to keep up with state-of-the-art technology, and thus employers have to retrain their labourers (30% - 40% of newly recruited workers in a certain industrial zone need retraining). Currently, some FDI enterprises have established vocational establishments such as the Dung Quat Vocational Training School (Dung Quat Industrial Zone), the Vietnam-Singapore (Vietnam-Singapore Industrial Zone) Semi-state College of Technique and Technology (Linh Trung Industrial Zone), the Sai Dong Industrial Zone's Training Center, the Bac Thang Long Industrial Zone's Training Center, etc. This model will be developed in the other industrial zones in the future. The advantages of vocational training in industrial zones are flexible programmes suitable to the enterprises' specific needs. Trainees are allowed to practice on the same devices operated at work, and are more likely to be employed after training. Nevertheless, since vocational schools in industrial zones are newly established, they still do not have enough experienced teachers possessing effective teaching methods. As a consequence, workers may find it hard to switch to another job if they leave the industrial zones.

General evaluation

- Enterprises of different economic sectors in Vietnam are developing rapidly, which is accelerating industrialization and modernization. This in turn generates an industrial labour force with high productivity, quality and effectiveness, which contributes to the

- competitiveness enhancement of Vietnam enterprises in domestic and foreign markets.
- Some enterprises, especially the FDI ones, have trained newly recruited workers by helping them to perform their tasks more skilfully on the assembly line.
 - Diverse vocational training network for enterprises has gradually met the market needs in terms of quantity, occupational, and level structure. The syllabi and teaching methods have been upgraded to match a business's highly specialized characteristics which often requires short-course training and quick adaption to changes in production technology.
 - The state has promulgated some policies encouraging enterprises to train their labourers.

However, there remain some obstacles for vocational training in general, and business vocational training in particular, e.g.:

- Vocational schools have not met the needs for highly skilled workers in some advanced technical and technological jobs. The syllabi and training methods are too general, inflexible, and not adaptable to specific requirements. Conditions for ensuring training quality remain limited.
- Some policies on training are not in synch, which prevents enterprises from setting up vocational institutions. Regulations on the responsibilities of enterprises for vocational training were not well defined. Not until the Law on Vocational Training took effect in June 2007 were these regulations stipulated.
- Vocational schools and enterprises are not very well networked with each other. In fact, enterprises are not allowed to take part in some stages of vocational training (except the ones specifically designed for enterprises), such as indentifying the right jobs for training, designing curriculum, coordinating practices for trainees, etc.

3. Orientation and solutions to link vocational training with enterprises

3.1. Orientations:

Stepping into the period of the country's accelerated industrialization and modernization, the extremely huge demand for high-skilled technical workers in industrial zones and spearheaded economic sectors requires strong reforms of the Vietnamese vocational training system. Vietnam's 2001-2010 Socio-economic Development Strategy has set out some basic goals:

- Lifting the country out of its underdeveloped status by accelerating the industrialization and modernization to establish a solid foundation for Vietnam to become a basically

industrialized modern country by 2020.

- Accelerating technological innovation, expanding industrial zones, and export processing zones to ensure that the country will become a nation with an average technological level as against other countries in the region.
- Restructuring the economy towards increasing the proportion of industry and services, and reducing the proportion of agriculture in the GDP; at the same time adjusting the labour structure so that by 2010, there will be only 50% of the labour force working in the agricultural sector, 23-24% of the workforce in the industrial and construction sectors, and 26-27% in the service sector.
- Increasing the rate of trained workers in the entire labour force with an aim to raising the percentage of technical workers from 20% in 2000, to 40%-50% in 2010.

In order to implement these goals, in the phase of accelerating industrialization and modernization, the quality of vocational training in particular has to be improved. Vocational training should be linked with market demand in the economic structure transfer and labour structure in terms of quantity, quality, level and occupational structure of industrial zones, export processing zones, rural areas, spearhead economic sectors, and labour exports. Consequently, vocational training should focus on developing short-course vocational training and highly-skilled technical worker training.

Therefore, the orientation of vocational training development has been defined as:

- Vocational training is to serve the goals of the country's socio-economic development strategy, make a contribution to improving the quality of human resources, generate new jobs and help self-generate jobs, meet the growing demand of the labour market and the worker's life-long learning aspirations, and accelerate the economic and labour restructuring.
- Establishing a practical technical training system with three levels (primary, secondary and college vocational training), connecting closely with training levels in the national education system.
- Expanding the training scale as well as focusing on improving the quality of technical workers to meet the growing demand of different economic sectors.

Some recommendations for enterprises' vocational training are as follows:

- Identifying clearly the state's, communities', and enterprises' responsibility in vocational training, in which businesses should be responsible for training their workers to meet their needs at the appropriate training level and form. If the business itself offers vocational training, they are entitled to the general incentive on vocational training under

governmental regulations. Otherwise, it should pay for the training expense at vocational training centres.

- Promoting regular and irregular forms of vocational training. The state should complete the regulations on the issuance of diplomas and certificates so as to ensure the vocational trainees' interests in business.
- Create incentives on land, taxes, training equipment, etc. to encourage enterprises to establish vocational training centres
- Enterprises should be allowed to become more involved in designing the vocational training curriculum, syllabi, and listing the jobs to be trained. Furthermore, they should determine job standards and evaluate the results of training.
- Enterprises should be responsible for coordinating with vocational training centres by allowing students to practice on their premises.

3.2. Suggested solutions:

- Reviewing and upgrading the vocational training network to meet businesses' needs for skilled workers.
- Specifying law provisions on vocational training to encourage businesses' establishment of vocational training centres, especially those enterprises with a large scale of labour use.
- Upgrading current vocational training centres or building new schools so as to have 40-50 large-scale vocational schools at the college level (vocational colleges), 10 of which are at the international level, located in focal economic zones or localities with more FDI enterprises and industrial zones. These schools not only provide labourers for FDI enterprises and industrial zones, but also train workers for local and national economic development.
- Improving the content of the vocational training programme and syllabus in the forms of modules to create access to advanced technology; ensure flexible, quick adaptation to changes in business technology and the labour market.
- Renewing vocational training methods with the application of advanced technology and techniques in teaching to promote student activity by increasing practice session times, encouraging student self-training; combining vocational training with practice, and standardizing vocational skills.
- Standardizing vocational teacher's ability and teaching methods. Vocational training centres should send teachers to business locations on an annual basis, in order for them to stay in touch with modern technological developments, technique, and production; it should also create convenient conditions for those who are, or will be, involved in a

business's vocational training to enhance their teaching ability, teaching skills at vocational training centres, or technical teacher training schools.

- In terms of policies, a business firm's vocational training conducted for social needs, or as decreed by the state, should be supported with long-term, short-term vocational training expense and the upgrading of training facilities, syllabi, and teacher training as stipulated. They should also be eligible for preferential tax and credit policies for vocational training activities. Teachers working in an enterprises' vocational training establishment should enjoy the same incentives and policies as teachers in other vocational training schools. While participating in vocational training, experienced specialists and engineers will enjoy the same benefits as vocational teachers.
- Companies which recruit trained workers or sign training contracts must contribute to the expenses of vocational training. The level of contributions can be negotiated but should not exceed the government's required level. Priority should be given to organizing vocational training and recruiting where land has been converted for business development.
- The vocational training management mechanism should be strongly renewed to create a breakthrough in the field of vocational training, to meet the changing demands of business in particular, and the economy in general. Information systems for the labour market should be set up to regularly spot market needs for workers, including skilled workers in each profession, in order to make timely, appropriate training plans for the labour supply.

In summary, in order to enhance a company's role in the economy and improve their competitiveness in domestic and international markets, policies on human resource improvement are needed. This should be done parallel to improving the legal system, creating an appropriate business environment, and offering capital and technological incentives. Training highly qualified and skilled workers to meet business demands is an inevitable requirement. To meet all these demands, the close collaboration between all levels and sectors, central and local levels, individual enterprises and vocational training schools in each locality is of great importance.

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Bünning, Frank & Schnarr, Alexander

Forging Strategic Partnerships between Stakeholders in TVET – Implications for the Vietnamese Vocational Education and Training System

1. Introductory consideration: Why “strategic partnerships”?

“The term ‘partnership’ has gradually emerged as a new form of governance. In the field of technical and vocational education and training (TVET) it describes co-ordination mechanisms at the system level, as well as co-operation between schools and businesses, at the institutional level. Partnerships may involve a wide range of actors including social partners, NGOs, community groups, or private providers” (Atchoarena 1999, 1). As Mitchell points out, “there are a multitude of stakeholders in training, who have varying and sometimes conflicting interests, objectives and priorities. These “multiple” stakeholders, at the various levels, include:

- the individual (workers, trainees, unemployed persons, etc.);
- the family (especially in the case of young persons);
- the community (leaders, local institutions and networks);
- voluntary agencies (at the local, regional and national levels);
- private training providers;

- public training institutions;
- workers and their organizations (at the enterprise, local, sectoral, and national levels);
- employers and their organizations (at the enterprise, local, sectoral, and national levels);
- government (local, state, and federal)” (Mitchell 1998, 12).

Therefore, because of the multitude of stakeholders involved in technical and vocational education and training, as well as varying national, historical, and cultural contexts of different TVET systems worldwide, “there are no specific models to follow or charted paths to show the way” (ibid., 15). Furthermore, there are particular aims when establishing partnerships in TVET. These include, but are not limited to “securing additional resources to finance TVET, improving the quality of training programmes and contents, facilitating the transition from school to work and promoting continuing access of workers” (Atchoarena et al. 1999, 4).

The purpose of this paper is to show which factors influence strategic partnerships and which actions need to be taken to forge, promote, and sustain those partnerships. They are called “strategic” because they involve different stakeholders on various levels of administration and in different positions in industry, education, and government.

2. Forging strategic partnerships between stakeholders in TVET

2.1 Getting the stakeholders involved

“Experience tends to show that genuine and equitable partnerships cannot be forced upon one party by another. The concept of partnership implies the freedom to join or leave, with willingness being shown by the various partners, clearly perceived mutual interests and benefits, a strong commitment and adequate capacity to make it work. There are certain aspects of partnerships that may require a regulatory framework and training legislation, such as certain forms of financing for training or apprenticeship. What happens to be essential, however, is that the regulatory and compulsory framework for such partnerships must be developed with the full and active participation of all the principal actors concerned” (Mitchell 1998, 11).

Strategic partnerships on different levels

Collaborations in TVET between public and private sector institutions (e.g. between vocational education schools and enterprises) can be formed on different levels and in a multitude of ways. However, a macro, meso, and micro level can be identified. The macro level of collaboration or partnership concerns the governmental or policy-making bodies of a TVET


system within a given country. It may be argued that a strong political commitment to form partnerships in TVET is essential to establish links between the education system and the world of work (see Atchoarena 1999, 3; Mitchell 1998, 19). On the macro level, the scope of partnerships ranges from national training policies, legislation and systems created by the government, representatives of employers and workers, to business donations of material or advice. The partnerships on the macro-level can be vertical (between local partners and national institutions) or horizontal (between local or national institutions). The meso-level of partnerships describes collaborations in the sector area, e.g. donations of equipment by a large manufacturer of agricultural machinery to an agricultural school, or partnerships of different public and private organisations in the automobile sector. On the micro-level, co-operations can be formed “between individual firms and public training institutions, and may also involve local government and public and private training providers, including voluntary agencies” (Mitchell 1998, 11).

2.2. Factors that constrain or enhance strategic partnerships

The success factors influencing strategic partnerships are manifold. A great variety of influential factors can be traced throughout the literature. However, there is some common ground concerning the fundamental issues to be considered when developing ideas about strategic partnerships in TVET between education providers and industry. Mitchell (1998) summarised these basic considerations in his work “Strategic partnerships between the State and enterprises”. Therefore, the following information makes generous use of his work. “In most countries, the main reason for developing public/private training partnerships is concern of current economic and technological changes in a context of increased global competition” (ibid, 17). This certainly is true in the Vietnamese context, especially after Vietnam recently joined the World Trade Organisation (WTO), and is now in need of highly qualified staff in order to increase the quality of their products and services. Thus, the link between industry and education is unavoidable.

The level of development of the private sector in a given country exerts great influence on the development of strategic partnerships in TVET. “[T]here is often a high level of diversity within the private sector in a given country, depending on the size and strengths of the various industries and economic sectors in different areas of the country” (ibid, 18). Furthermore, great differences can be identified between quickly-developing, industrialised countries with a comparatively strong private sector, and developing countries in which the private sector is limited in its development. This shows that the involvement of the private sector in forging strategic partnerships exhibits a great complexity. Therefore, “policies to promote partnerships have to take into account the diversity of national situations and the specific characteristics of the private sector between countries, as well as between sectors, industries and geographical regions of a country” (ibid, 19).

As previously explained, it is important to include all relevant stakeholders in the formation of a strategic partnership in vocational education. Therefore, as Mitchell points out, “the



exploration and identification of common ground between stakeholders through participatory approaches is likely to prove a difficult, time-consuming, but essential process for the development of a learning culture in the longer term, as well as for the sustainability of partnerships.

The question which therefore arises is how to secure the participation of stakeholders, and especially those who do not have strong representation” (ibid 18). To put it another way: working partnerships between the TVET system and industry require a certain “common vision” between the partners involved.

There are many examples worldwide where a strong national training agency is the primary institution in the development of training policies and strategies, working together with the social partners (e.g., the National Training Board in South Africa, and the Federal Institute for Vocational Education and Training in Germany). This implies that, as stated earlier, a strong political commitment towards the forging of links with industry is a basic necessity. As Atchoarena puts it, “in order to create the appropriate environment for partnership to happen, it is government’s task to formulate laws enabling the stakeholders to take responsibility and participate, not only to defend their own views, but in the best interest of all parties. Strategic issues for which clear legislation is required include access, provision, financing, certification and social dialogue” (Atchoarena 1999, 5).

In recent years, local stakeholders have gained importance as actors in vocational education and training, their primary concern being the skills development of local manpower. “Highly responsive to local demand, partnerships are better able to respond to changing local needs, encourage training providers to be more market-driven, exploit the community’s private and public resources for training and mobilize local networks of stakeholders, leaders, employers, workers, training providers, educators, academics and associations” (Mitchell 1998, 20). It should be emphasised that the establishment of effective and sustainable partnerships largely depends on the degree to which the government is prepared to delegate authority and responsibility to the private sector, and on the degree of control retained by the government over systems shared with the private sector. Furthermore, the effectiveness of collaborations also depends on the development of an accurate perception of the strengths and weaknesses of each partner not only on the macro, but also on the meso, and micro levels.

Collective bargaining also is a powerful instrument to promote dialogue between stakeholders on different levels and to support action between employers and workers in the field of vocational training. “In this respect, a distinction should be made between, on the one hand, tripartite consultation and agreements reached between the government, employers and workers and, on the other hand, collective bargaining and bipartite agreements reached between workers and employers within the legal framework or labour legislation” (ibid. 24).

3. Co-operation between education providers and industry – examples

3.1 Germany – A Dual System

In Germany, the Vocational Education Law (Berufsbildungsgesetz) is the overall law for vocational education and training, which includes the Dual System. Apart from that, the school laws (Schulgesetze) of the federal states play a significant role in the design of the vocational education system. Vocational Training Directives (Ausbildungsordnungen) stipulate the rules and regulations for training in specific professions⁽¹⁾ for the in-company part of vocational education.

Part 1 of the Vocational Education Law gives detailed explanations about the overall aim of vocational education. Paragraph 2 distinguishes between the places of learning in the system of vocational education (Lernorte): on the one hand companies for the company-based vocational training, and on the other hand schools for the school-based part. According to §2(3,2) of the Vocational Education Law, the two “learning locations” need to co-operate. Therefore, in the German Dual System, a partnership between industry and vocational education providers is binding by law. It must be pointed out, however, that the Vocational Education Law entrusts the companies with the main responsibility for vocational education. This is due to the political organisation of the German education system, as well as the accumulation of historical developments. The Vocational Training Directives describe the content and scope of training of a certain profession. Thus, vocational education schools in Germany have a so-called “curricular remainder function”, adding on the vocational training in companies with general subjects (mathematics, foreign languages etc.) as well as vocational subjects. It should also be noted that vocational training contracts are signed between the company and the student, not between the school and the student. Students either go to vocational school part-time (2-3 times a week) or full-time (2 weeks without having to be present in the company).

3.2 France – a school-based system

Vocational education in France is primarily organised in full-time vocational schools which are the responsibility of the government. This is due to historical developments in France in which the government took over problematic functions. Full-time vocational schools became an

⁽¹⁾ Vocational education science in Germany distinguishes between different concepts of “professions”: “job” (Erwerbsberuf) as a means to earn money, as opposed to “training profession” (Ausbildungsberuf) as a formally structured, officially recognised set of skills and knowledge acquired through a vocational training course.

option when industry and social partners would not take responsibility for vocational education. A consequence of the integration of vocational education into the general education system is the hierarchisation of general and vocational education, the latter having a lower reputation.

Upon completion of general secondary education, four pathways can be distinguished in France: the general education pathway leading to a university entry qualification (baccalauréat général); the technical-specialist pathway at a technical school (lycée technique) leading to a (technical) subject-specific university entry qualification. Within this pathway, 6 to 20 weeks in total are spent in companies as part of an internship. The vocational education pathway at vocational high schools (lycées d'enseignement professionnel), or in vocationally-oriented classes at a regular high school, finishes with a professional qualification (certificat d'aptitude professionnelle), or with a subject-specific university entry qualification. This pathway directly prepares the pupils for the world of work. In this full-time schooling model, practical phases or internships are not mandatory.

Apart from these three models, 16-25 year-olds also have the possibility to get a certification in a profession through an apprenticeship programme in which vocational education is conducted alternately in companies and in apprentice education centres (centre de formation des apprentis, CFA). The duration of this pathway is 1-3 years, depending on the company and the student's requirements. Any professional certification may be obtained through this pathway. The employer is responsible for the practical part of vocational training, whereas the apprentice education centres take on the theoretical part. Hence, in this vocational education model, responsibility is split equally between the company and the school. However, a training contract is only between the company and the student. During the apprenticeship, the student has the status of an employee and receives a small salary (30-80% of the agreed minimum wage of 1,090 €).

This model of vocational education has been expanding in recent years. Now, approx. 1/3 of the age group entering vocational education chooses this pathway (see DIHK 2004).

3.3 Great Britain – an industry-based system

The vocational education system in Great Britain is based on the philosophy that anyone can obtain any vocational qualification, regardless of the when, where, and how. These National Vocational Qualifications (NVQs) can be issued by a variety of organisations; the governing body is the Qualification and Curriculum Authority (QCA).

The qualifications assess the actual skills of the student and are based on the principle of combining different learning units without restrictions in regard to the time frame.

Vocational education is conducted, in parts, by further education institutions, vocational education providers, or the employers. Most further education institutions are polytechnics with diversity in various vocational fields (for more information see BIBB 2007).

The NVQ system is very flexible and focuses on qualification and performance standards for a specific job rather than on the pathway through which the vocational qualification has been obtained. Because of this, there are no binding, formalised partnerships between industry and vocational education providers on a national level.

4. Concluding remarks: Strategic partnerships at work

The European examples in the previous chapter clearly show the validity of the success factors for strategic partnerships as explained in chapter 2.

The German Dual System of vocational education has a long history, dating back to medieval times. This explains the positive and open attitude of industry and schools that cooperate in the training system. Furthermore, the Vocational Education Law as well as the Training Directives provide a national regulatory framework, with the Federal Institute for Vocational Education and Training as the governing body. By school laws in each federal state, decentralisation and local partnerships on the one hand, and the participation of enterprises of all sizes, especially SMEs, in vocational training on the local level, on the other hand, are secured.

France traditionally has a school-based vocational education system in which the links with industry are comparatively weak. In this system, a strong centralisation can be identified, since the state is responsible for all regulations concerning vocational education and training. Apart from that, traditional French vocational training is integrated into the general education system, as shown in chapter 3. In a cultural context, technical and vocational education and training is seen as less desirable than general secondary and tertiary education. However, it can be stated that a trend towards a co-operative model of vocational education is in evidence, making vocational training more practical while conducting it outside the general education system. The alternate form of training in France as described in the previous chapter also bears a decentralising aspect, since the school-based part is conducted in local education centres. Furthermore, this co-operative, alternating model makes it easier for companies to recruit students that are prepared for the world of work, since these students usually already have a training contract with companies.

In Great Britain, the Qualification and Curriculum Authority (QCA) is the governing body for vocational education and training on a national level. However, due to the philosophy applied in the development of the National Vocational Qualifications (NVQs), there is no national framework regulating the partnership between industry and vocational training institutions. Nevertheless, the output-oriented and qualification-based approach of the NVQ system intends to produce skilled workers who meet the requirements of the labour market. The British example shows that, as stated at the beginning of this article, it is not advisable to force partnerships upon the stakeholders involved in vocational education and training.

On the contrary, sustainable co-operations and partnerships evolve naturally as a necessity if certain factors are considered in the development of a profound vocational education and training system, such as putting in place national mechanisms, ensuring a level of autonomy and decentralisation on the local level, considering the characteristics of the private sector, and creating a positive attitude of all partners. For the Vietnamese situation, this implies staying on the promising path the government is already pursuing by passing the vocational education law and by re-arranging the responsibilities in the education system.

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Pham Le Phuong

High Quality Labour Force for Industrial Parks – A Challenge for Vocational Training

After over 15 years of construction and development, Vietnam's industrial parks and export processing zones have created breakthroughs in industrial development in particular and in socio-economic development in general. This has contributed to strongly speeding up economic structure transformation in such a way that we strive to become a modernized and industrialized country by the year 2020.

In 2007, 183 industrial parks were established nationwide, with a total land area of 43,687 ha, and located in more than 54 provinces and cities; of this, leaseable industrial land occupies 29,179 ha, accounting for 66.8%. Industrial parks are mainly concentrated in three focal economic areas, representing 72.7% of total industrial parks (133 industrial parks), and 80.9% (35,346 ha) of total land areas of industrial parks nationwide; of these, the southern focal economic area possessed 87 industrial parks covering a total land area of 24,198 ha. Industrial parks in the whole country attracted over 3,020 foreign invested projects, with a total investment capital of USD 29,872 million and 3,070 domestically invested projects with a total registered capital of VND 197,382 billion.

The development of industrial parks has created breakthroughs in industrial and socio-economic development. Industrial output created by industrial parks represents about 1/4 to 1/3 of total industrial production. Industrial parks have created a highly skilled labour force for meeting the requirements of modern production and highly qualified managers. This greatly contributes to accelerating the labour structure transformation. However, the experience of industrial park development indicates that labour supply-demand has become seriously imbalanced, especially for a highly qualified labour force, and labour shifts have been relatively high. This has affected industrial park development and performance.

As a result, it is urgent that we rapidly develop a high quality labour force, capable of meeting the requirements of industrial park developments.

1. Status of labour supply–demand and high quality labour force for industrial parks

1.1. Labour supply

• Quantitative availability of labour is relatively plentiful

- The labour force has been continuously increasing (1,026 million persons/year) at a high rate (2.5%/year), and is chiefly concentrated in three regions: the Red River Delta (22.41%), the Mekong River Delta (21.44%), and the South Eastern Region (15.28%). The labour availability has shown gradual decline however in the following regions: North Central Region (12.02%), North East Region (11.78%), South Central Region (8.26%), the Central Highlands (5.6%), and the North West Region (3.61%).

Overall, the labour supply (both males and females) quantitatively has been subject to a downward trend as a result of decreased labour entrance rates and an increase in school enrolment.

- The quantitative availability of the trained labour supply has been, in general, relatively scarce due to a very small and uneven distribution of the trained labour force in different regions of the country.

The trained labour force accounted for 24.8% (11,003 million persons) in 2005, including 15.2% of vocational graduates (primary vocational trained workers, workers with vocational certificates, technical workers with and without certificates); 4.3% of secondary technical graduates, and 5.3% of junior college and university graduates. The South Eastern Region records the highest rate of trained labour force (37.4%), followed by the Red River Delta (34.4%). The region with the lowest rate is the North West (13.5%), while other regions range from 16% to 18%.

Trained labour is mainly concentrated in industry and construction, and in the South focal economic area (27.91%), and the North focal economic area (23.97%).

The trained labour force at all levels has been, in the main, fed by new graduates. During 2001-2005, the training scope and number of graduates increased continuously: 9% & 5.45% (colleges and universities); 17.1% & 20.3% (secondary technical education) and vocational training: 9.15%/year, of including 12.22%/year of long term training, and 8.5%/year of short term training.

• Qualitative availability of labour and high quality labour

- Vietnam's human resource physical strength has remained weak, failing to meet the criteria of the international labour science organization, and its working requirements for scope, stress endurance, and durability by modern industrialized society.

- Vietnam's trained labour force has been inherently small in number (24.8%), but even the ones that can meet employer requirements are very "rare".

In 2005, the part of the labour force equipped with high technical qualifications (excluding those engaged in agriculture and forestry) accounted for only 3.78% (1.645 million persons), while those with average technical qualifications represented 3.11% (1.352 million); workers with assembling technical and equipment operation skills: 3.83% (1.663 million), staff: 0.98% (0.426 million), managers: 0.7% (0.3 million).

- Vietnam's human resource quality is very low compared to the rest of the world. The availability of high quality labour (as rated by a scale of 10) is also very low: scores of 3.25 (availability of high quality labour), 3.5 (availability of high quality administrative staff), 2.75 (availability of high quality managers), 2.62 (English proficiency), and 2.5 (high-tech proficiency).

The low skill level of the available human resources results in reduced competitiveness at all three levels of nation, business, and product.

1.2. Labour utilization and labour demand by industrial parks' enterprises

Since 2000, the number of labourers in industry has increased relatively rapidly. In 2007, enterprises in industrial parks employed 1,041,474 employees, accounting for 25.9% of total labourers in industrial production establishments and enterprises (state owned, non-state owned, and FDI), and about 17.5% of total labour force by industry. The South Eastern Region and the Red River Delta are the two regions attracting the majority of projects to industrial parks, thus employing up to 80.3% of the total industrial parks' labour force. The South Eastern Region's industrial parks employed 3.6 times more than those of the Red River Delta (ranked the second), and 28 times more than that of the Central Highlands (ranked the last).

- Labour demand by industrial parks has risen with their development. The demand for unskilled workers directly engaged in production by the enterprises in industrial parks always occupies a relatively high proportion of total labour demand.

Nationwide human resource demand index in 2007 went up by 67% compared to 2006. On average, labour in industrial parks increases by 23% per annum (146,620 persons/year).

In 2006, enterprises in industrial parks in Hai Phong needed to newly recruit and supplement from 4,500 to 6,000 employees, including 30% of trained workers and 70% unskilled ones. In the period 2006-2010, enterprises in industrial parks in Dong Nai require additionally about 35,000 labourers/year, with an average of 2,700 employees for each enterprise. FDI enterprises in industrial parks had an increased demand of 22,927 labourers at the end of 2007 (an average of 1,763 employees for each industrial park). Industrial parks in Ho Chi Minh City in 2008 needed 50,000 employees. Administrative staff and production managers (university or college graduates) in FDI enterprises account for only 1.2% of the total labour force at the higher ages (but only from the age of 25 to 30).

- Quality of employees working in industrial parks has increasingly improved, along with the process of enterprise development and the selection of projects. Employees, especially in FDI enterprises, are young and educated. However, the number of trained labourers in enterprises in general has still been small, especially in labour intensive industries that have a smaller number of trained labour than in state-owned enterprises.

On average, at present, the trained labour force in industrial parks (40%) is higher than the average level nationwide 2007 (31.5%), of which college and university graduates account for 4.5%, secondary technical graduates and technical workers 35.5%, and unskilled workers 60%. High-quality labour (evaluated by education certificates and degrees) are in the largest number in state-owned enterprises.

Age and labour structures by educational levels in industrial parks, especially in FDI enterprises, have been more advantageous than in other types of enterprises: 85% of the labour force is under 34 years of age, only 0.5% is over 55, and nearly 85% have graduated from higher secondary school, laying a very good foundation for technical training. However, the critical factor is that, after being recruited by FDI enterprises, a large proportion of unskilled workers are trained by the enterprises themselves for meeting their requirements.

Technical qualifications of labour in industrial parks are normally low, mainly focusing on textiles, leather shoes, and the seafood processing industries in the Centre and the South of Vietnam. While on average, the trained labour force in industrial parks in Dong Nai accounts for 40.5% (including 5.6% of college and university graduates; 33.2% of secondary technical graduates and technical workers) and unskilled workers occupy only 59.5%, in 2007 FDI enterprises in the industrial parks of the province recruited up to 78.8% of unskilled workers. In Hanoi, 75% of the labour recruited by enterprises in industrial parks has not yet been vocationally trained, although the majority of them graduated from higher secondary schools.

Female migrant labour from other provinces always accounts for a high rate and has been in continuously increased tendency along with the increased occupancy rate and the development rate of industrial parks.

Female migrant labours from other provinces always accounts for a high rate of employees and its number has continued to increase along with the increased occupancy rate and the development rate of industrial parks.

The number of female employees in industrial parks and export processing zones is relatively high (with a rate over 50%). Female employees in the surveyed FDI enterprises account for 66.53%-68.76%, and this rate is trending ever upwards. In 2007, the figures in FDI enterprises in Dong Nai and Hanoi were 73.89% and 70% respectively.

Migrant labour working in provinces/cities in the South Eastern Region (Dong Nai, Ho Chi Minh City) accounts for over 60%, especially Binh Duong with a rate of over 90%. The Red River Delta also has a very high percentage of migrant workers (68% in Hanoi).

- **Annual demand for labour by enterprises in industrial parks is very high. This is especially true in the Central and the South Eastern Regions in the early and late months of the year as a result of production expansion and big labour shift. The “import” of high quality labour is one of the measures for resolving the current labour shortage**

Annual demand for labour has been increasing as a result of production expansion by existing enterprises, the increased number of projects put into operation, and the development of industrial parks. In the information technology industry alone, five of the biggest companies in the world are active, namely: Intel, Renesas, Campel, Samsung, and Foxcon. They have decided to invest nearly USD 10 billion in Vietnam to design and produce chips, computers, telecommunications equipment, and this will require thousands of employees. Employee recruitment is the foremost concern of the investors.

Enterprises in the industrial parks, especially those engaged in labour intensive industries such as textiles, leather shoes, processing, assembling, etc., have been thirsty for labour due to production expansion and labour shifts (on average 50-60%, even up to 70% in Ho Chi Minh city).

Enterprises in industrial parks are not only experiencing a shortage of labour quantitatively, but they also suffer a serious deficiency in the average and high quality labour force for positions such as general director, executive director, marketing director, financial director, etc. The “import” of high quality labour is one of the measures for resolving the current labour shortage.

1.3. Labour supply – demand

Under the context of international integration, Vietnam currently has to face big challenges with its human resources. Its trained human resources, including short term training, account for a very small percentage of the total labour force (24.8% in 2005, and 31.5% in 2007).

The report for the second quarter of 2007 by the Ministry of Education and Training indicates that the labour supply increased by 30%, while demand jumped by 142%. Businesses met with a lot of difficulties in recruiting trained employees at different levels, especially technical staff (technical college graduates), skilled technical workers for production, and senior managers.

Under the context of an overall supply and demand imbalance, as well as an imbalance in each segment of the labour market, statistics by the Ministry of Education and Training indicates that 63% of total graduates could not find jobs, while a large percentage could not meet the working requirements. Many companies had to retrain them for another 1-2 years. As reported by Department of Vocational Training, many enterprises, mainly in processing and construction, lack 1.4-1.5 million skilled employees. However, the supply capacity is very limited, mainly short term trained labour; long term trained ones account for only about 6-10% of the total. In industrial parks, only 20-40% young workers can adapt to technological changes; 30% of workers meet the requirements for working style. They, at the same time, are

of limited capacity in social communication.

In the information technology (IT) industry, only 14% of IT engineers meet international standards, while local recruitment demand is relatively high.

Shipbuilding - one economic industry with a rapid growth rate (30-50%/year) - has been short of human resources at all levels, from technical workers to high qualified staff. However, training can meet only about 40-60% of the demand.

In Dong Nai in 2007, labour demand was for 30,000 employees, including 50% technical workers, but the local supply could only meet 40% of the need.

Vietnam labour market indicators (2006) imply that the highly qualified human resource supply in Vietnam can meet only 30-40% of business demands. This problem has become more serious since Vietnam's accession to the WTO.

The current situation reflects the imbalance of trained labour supply and demand. The most important reasons for this are: job applicants fail to meet the requirements for professional skills (80.3%), they are not trained in the required skills (53.2%), and enterprises not able to provide accommodations (15.4%).

Practice has shown that: "What enterprises need is not possessed by students, and vice versa". Software recruiters said only 5.0%-6.66% of applicants were selected, while many IT graduates were unemployed as a result of insufficient training: 72% of applicants lack practical skills; 46% lack specialized professional knowledge; 42% lack team-work skills and insufficient foreign language skills; 41% fail to work, present, and express; 28% lack confidence in working. What enterprises need is knowledge and skills from their employees. 75% of surveyed enterprises had to train and retrain their employees in various forms. The main reasons for the above-mentioned problems are:

- The availability of a trained labour force on the spot is still low due to the uneven distribution of education and training institutions, and the incompatibility between strategies for industrial park development and human resource training;
- Vocational training structure mismatches with labour structure requirements for businesses;
- Quality of trained labour fails to meet enterprise requirements, lagging behind regional standards. This is the problem of the entire education and training system at present (physical infrastructure, teachers, training budget, curriculum, backward teaching methods, etc.);
- Salary/income is always an issue of concern - one of the factors strongly affecting labour supply and demand, and labour shift in industrial parks;
- Working conditions, housing and life quality of the labourer are also issues of concern and have an impact on labour supply and demand, and labour shifts in industrial parks;
- The transaction system in the labour market has been developing under various forms (employment fair, online employment market, Website "Employees seek jobs - jobs look for employees", employment exchange) and has gradually improved. However, its operation efficiency has still been limited.

2. Factors affecting high quality labour supply – demand for industrial parks

There are four Factors affecting labour supply - demand for industrial parks:

- (1) Vietnam's socio-economic development under the conditions of a knowledge-based economy and international integration are intended to realize the objectives of the 10 year development strategy (2001 - 2010). Implementing the strategy for strongly promoting national industrialization-modernization, building up the foundation in such a way that our country will have basically become an industrialized country by the year 2020, improving our position in the international forum;
- (2) Realizing the objectives of developing industrial parks in Vietnam up to the year 2015. and their development directions up to 2020 approved by the Government under the availability of many advantageous conditions in foreign investment attraction and selection towards the direction of sustainable development and utilization of agricultural land;
- (3) The changes in scope, structure, distribution, and quality of population - human resources affect training needs, creating direct labour supply on the spot for industrial parks. It is necessary to take advantage of "golden" moment of population - human resources (when population at working age reaches the highest percentage (63.6%) and the dependence coefficient shall be at the smallest percentage (0.57)) to rapidly build up and develop high quality labour force for meeting the development requirements of the country;
- (4) The Government's guidelines, mechanisms and policies on human resource development strongly and directly affect the formation, utilization and development of human resources, creating conditions for realizing the objectives of industrial development in particular and national socio-economic development in general.

3. Measures for securing high quality labour force for industrial parks

Based on analytical results and an assessment of qualified labour supply for industrial parks, some major qualitative measures are recommended for ensuring qualified labour for industrial parks. The recommended measures are divided into the following three groups:

3.1. Group of measures affecting labour demand

Closely linking industrial park development to a socio-economic development master plan, and complying with the approved master plan. Industrial park construction must be in line with

the realization of a technical infrastructure master plan, along with the development and implementation of a social infrastructure in the industrial parks area.

- Strengthening investment promotion for industrial parks; integrating foreign direct investment activities with investment promotion; introduction and guidance for attracting investment into the industrial parks; renovating and diversifying investment promotion.
- Developing policies on generating capital and supporting the development of inside-the-fence infrastructures in more disadvantaged areas, policies on bank credits for industrial park's infrastructure development business operations; strengthening state management of industrial parks.
- Adjusting the attraction of investment towards limiting labour intensive projects to localities/regions at the higher economic development level; more focus on the industries that have more impact such as high-tech, source technology, and clean technology industries with high value added and export value; paying attention to attracting investors from multinational groups, especially from big economies such as the United States, Japan, and the EU.
- Consolidating the linkages between labour supply and demand through: enhancing the capacity and performance of industrial park management in creating linkages between labour supply and demand; enhancing participation by enterprises in the training process through tailoring human resource training; cooperating in designing training curriculum for schools; participating in the advisory board for training quality verification; facilitating students to attain internships in the enterprises; taking part in tutoring by topic and providing practical guidance; specifying, encouraging, and providing preferences to enterprises to participate in and support human resource training; taking part in opening vocational training schools/centres for skills development in the industrial parks.

3. 2. Group of measures ensuring labour supply

- Realizing proper state management in developing education and training for the country. This should be above all reflected in macro governance of training development and human resource utilization (ensuring the consistency, comprehensiveness, cross-sector, cross-region), as well as agreeing on a common strategy on human resource development (intended for Government approval). This strategy includes a programme for human resource development for enterprises in industrial parks and vocational training for rural youths, especially localities which are subject to land use purpose transformation. The Government's role shifts from a main executor to a main facilitator.
- Measures to expand the scope, adjust structure, and distribute education and training in such a way that it will be suitable for meeting the objectives and tasks of socio-economic development.

- + Proceeding in a timely manner with the realization of a university and college network master plan for 2006-2020, along with a master plan for developing a network of vocational colleges, vocational secondary schools, and centres up to 2010. Approval from the Government should come in 2020;
- + Assessing the existing vocational secondary schools and proceeding with the development of the master plan for a network of vocational secondary schools;
- + Adjusting training levels and vocation structures by taking compatible measures: organizing national networks to advocate for changing the awareness on “to be a master - to be a worker”; practicing professional/vocational guidance; realizing continuous training in the national education system; adjusting training structure through tuition fees; fellowship and credits for students and pupils; improving and implementing in a timely manner the project on “support the youths to be vocationally trained and employed” (with USD 1 billion budget); creating “pay as you go”. The paid mechanism must be linked to the labour market.

To create linkages between human resource training and utilization, the following measures need to be implemented: training by “address”, with orders placed by enterprises; establishing a close working relationship with business; monitoring students after their graduation and keeping in contact with alumni. Consolidating relations with appropriate agencies, local authorities, and industrial parks management authorities is the measure that needs to be first and immediately.

- Measures for improving training quality
 - + Publishing criteria for establishing schools, including standards of training outputs, and education quality verification;
 - + Improving physical infrastructure, especially teaching equipment and instruments (establishing standards for a school's physical infrastructure);
 - + Renovating training contents and methods;
 - + Developing a contingent of trainers: in both quantity and quality (trainer standards); providing preferences to talented persons and worthy services under the spirit of paying respect to the teaching profession;
 - + Developing the “Research - Training” culture in such a way that education institutions will become “intellectual institutions” providing knowledge and techniques to society;
 - + Closely linking training and employment through the Cooperation Programme between training institutions and enterprises in industrial parks (research contracts, invitation of enterprises staff to give lectures, and the provision for practical guidance; establishment of training benchmarks to be in line with a business's recruitment criteria; development of training curriculum; verification of training quality; enterprises becoming the place for student internships).
 - + Decentralizing in an absolute manner, granting autonomy to education and training institutions for taking responsibility for their work;

- + Developing policies on mobilizing and utilizing human resource for education and training development (diversifying the forms of mobilization and resources; renovating resource use and distribution).

3. 3. Group of market measures

- Improving the legal environment for developing and realizing the state management of the exchange system in the labour market.
- Developing and improving operation efficiency of the employment exchange system: diversifying and developing exchange institutions in all forms to ensure efficient human resource supply and utilization (e.g. employment introduction centres, social organizations, human resource supply companies; employment introduction centres in the education and training institutions; out-sourcing enterprises - a relatively popular model in other countries); enhancing the coordination among employment introduction centres in the regions and nationwide; consolidating international cooperation in employment services;
- Developing and improving the labour information market, meeting the socioeconomic development requirements under the context of international integration.
- Establishing and developing a vocational consultancy and guidance system; diversifying vocational consultancy and guidance forms and modes.

3. 4. Other measures

- Adjusting the labour and social affairs legal system to be in line with international standards and market principles, especially the relations between labour, labour employment, social security.
- Supporting vocational training for employees who are subject to job transfers in the areas where land is acquired for constructing industrial parks and export processing zones; encouraging and providing preferences for industrial parks, and enterprises in industrial parks, to open vocational schools on their sites to directly meet their own human resource needs.
- Establishing and operating in a timely manner the National Human Resource Forecasting Centre.
- Investing in housing construction; taking care of the spiritual and cultural life of industrial park workers.



Phung Quang Huy

Vietnam Chamber of Commerce and Industry's Role in Vocational Training

Integration into the world economy requires Vietnam to have a qualified and skilled labour force to meet the requirements of local and international labour markets. Vocational training plays a very important role in the labour market, and in the cause is socio-economic development, job generation, poverty reduction, and labour structure transformation.


Discussing the issue of vocational training, almost all enterprises agree that vocational training is currently being conducted in a wasteful manner, failing to meet requirements and attract business's involvement. Enterprises once again have to invest their own money in retraining, normally in the form of internships in the factories.

In dealing with the problem, enterprises should not stand alone, but should instead closely cooperate with training institutions, providing the latter with the information on their needs and their actual production status, so that the training institution can work out appropriate training measures.

Every year, large-scale enterprises have their own training plans for their workers. Phong Phu Textile annually sends their workers to tailor-made training courses at training institutions. Toyota Vietnam cooperates with training institutions to integrate their own required skills into the training institution's curriculum for students who directly work for the company's agents and then recruit them. This is also one of the measures for dealing with the problem when enterprises can not directly engage in training.

It is not accidental that before Vietnam's accession to the World Trade Organization (WTO), many people argued that our enterprises and labour force were still sub-standard. As a result, some enterprises, before Vietnam's accession to the WTO, had their own plans to improve worker qualifications. The business initiative in raising workers' standards for the global playing field is seen as an encouraging signal.

Being aware of the importance of human resource qualification improvement in the context of international integration is one of the important objectives of the Employer Representative Organization.



Functioning as a representative for the business community, the Vietnam Chamber of Commerce and Industry should create the linkages between enterprises and vocational training institutions by providing them with information on labour supply and demand. They should have an influential voice over policy on vocational training at the higher vocational education level and higher, participating in the process of establishing and developing regulations on vocational training.

Recommendations:

- Cooperation with training institutions, creating close linkages with the community. This is a very important activity because at present, training institution activities seem to be mostly separated from the community on the one hand, and on the other hand, the general community does not fully understand the activities undertaken by the training institutions. What needs to be done is to improve vocational training quality, identifying very clearly the diversity of the market economy and assisting young people in selecting an appropriate vocational training course for themselves.
- Encourage higher secondary graduates to select appropriate vocations to be trained in.
- Encourage continuous education between vocational institutions and universities.
- It is necessary to comprehensively assess the demands for professional skills from different economic sectors.
- Create close linkages between the orders placed by enterprises and training institutions on a contractual basis. The important thing is that these contractual agreements must be linked to plans established by training institutions, as well as to the strategic plans of business.
- Employers offer higher salary levels to university graduates who have practical experience.
- Standardise Vietnam’s vocational skill system on the ASEAN level.
- A standardised list of professions.



Se-Yung LIM

Experiences and Reflections on Industrial Needs Orientation of Vocational Technical High School Education in the Republic of Korea (South Korea)

1. Introduction

It is my honour to participate in this work shop in Hanoi, the capital city of Vietnam, and I thank you very much for the invitation from the Vietnamese Government and the German organization of international cooperation ,InWent'. The topic of this workshop “Industrial Needs Orientation in Vocational Technical Education” is an interesting research topic, because it is a weak point of the Republic of Korea’s (Korea hereafter) vocational education and therefore an attractive research topic for Korean vocational educators.

Under the vocational technical education (VTE) system, there is initial vocational education, followed by further training. In Korea, initial vocational education takes place in vocational high schools at the secondary level, polytechnic colleges and junior colleges in tertiary level, and also in vocational training institutes as part of non-formal education under the Ministry of Labour. I want to limit my current presentation to vocational high school education on the secondary level.

Vocational technical high schools in Korea are confronting many problems: lack of attractiveness for middle school graduates, low rate of applicants employed after school leaving, and a low level of recognition by industry as to the quality of technical high school education. To enhance student motivation and industry recognition, Korean technical high schools have tried to implement new educational approaches that should strengthen the industrial-

orientation of the curriculum. I will then discuss the following questions:

- What is the Korean experience in relation to the industrial needs orientation of Vocational Technical Education (VTE)?
- Are there any general conditions or cultural preconditions to introduce a system of industrial needs-oriented VTE?
- Are there any fatal problems with the industrial needs orientation in VTE in Korea?

2. Social economic situation and issues for the VTE

The vocational education system of a nation cannot be separated from its geographic position and cultural situation. As one's expectation for his vocational future influences his learning performance, the history of a society influences the structure of its educational system. The review of the social economic situation of VTE in this section will offer an overview, in order to explain the industrial orientation of Korean VTE in the next section.

2.1 Introduction to the Republic of Korea (South Korea)

The Korean peninsula and all its islands lie between 124° 11' and 131° 52' of east longitude, 33° 06' and 43° 0' of north latitude. The total area is about 221,000 km². 45% (99,117 km²) of the total area belongs to South Korea. The Republic is divided into 16 administrative units: seven metropolitan cities and nine provinces (MOE, 2006). The climate of the Republic is temperate as it is under the influence of a continental dry winter and a moist, maritime summer dominated by monsoons. With four distinct seasons, the temperature between winter and summer varies significantly. Ethnically, Koreans are part of the Mongolian race; they speak one common language, which belongs to the Ural-Altai variant. In the seventh century, the various states of the peninsula were unified for the first time under the Silla Kingdom (57 B.C.-935 A.D.). Such homogeneity has enabled Koreans to be relatively free from ethnic problems (MOE, 2006). As of the end of 2005, Korea's total population was estimated at 48,294,000 with a density of 474 people per square kilometre. The Korean government saw its population grow by an annual rate of 3 percent during the 1960s, but growth slowed to 2 percent over the next decade. In 2005, the rate stood at 0.44 percent and is expected to further decline to 0.01 percent by 2020. A notable trend in Korea's demographics is that the population is growing older with each passing year. Statistics show that 6.9 percent of the total population of Korea was 65 years or older in 1999, compared to 9.1 percent in 2005 (www.korea.net, 2006).

Up until the early 20th century, Korea was a society based primarily on agriculture. However, Korea has been able to join the leading group of developing countries thanks to a series of government-led economic development plans implemented since the early 1960s. The extraordinary development of education in Korea during the past half century in particular is believed to be a key factor that has contributed to this economic development.

2.2 Education system and the status of vocational high schools

The education system of the Republic consists of one-to three-year pre-schooling and kindergartens, six-year elementary schools, three-year middle schools, three-year high schools, and four-year colleges and universities. There are 2-3 year junior colleges and vocational (polytechnic) colleges. Elementary school and middle school education are compulsory (MOE, 2004).

The first divergence in the educational path takes place after the 9th year, in the transition from middle school to high school. There are two types of high schools in the Republic: general and vocational. Applicants for vocational high schools (covering agriculture, engineering, commerce, maritime studies and home economics) are admitted through examinations administered by each school. The curriculum at vocational high school is usually 40-60 percent general courses with the remainder being vocational. As of 2005, there were 713 vocational high schools with 503,104 students.

Table 1: Number of Vocational High Schools

Yr.	Total	Number of Vocational High Schools						
	Number of High schools (A)	Sub Total (B)	Agricultural	Technical	Commercial	Fishery/ Maritime	Home economics	Comprehensive
1990	1,683	587 (100.0)	55 (9.4)	104 (17.7)	208 (35.4)	9 (1.5)	16 (2.7)	195 (33.2)
1995	1,830	762 (100.0)	29 (3.8)	175 (23.0)	248 (32.5)	9 (1.2)	62 (8.1)	239 (31.4)
2000	1,957	764 (100.0)	26 (3.4)	203 (26.6)	238 (31.2)	8 (1.0)	75 (9.8)	214 (28.0)
2005	2,080	713 (100.0)	31 (4.3)	212 (29.7)	212 (29.7)	8 (1.1)	64 (9.0)	186 (26.1)
2006	2,144	707 (100.0)	30 (4.2)	212 (30.0)	209 (29.6)	8 (1.1)	64 (9.1)	184 (26.0)

Source: MOE (2007)

Among general high schools, there are several specialized high schools in the arts, and physical education for students with special talents in these fields. The curriculum of the high schools tend to centre around preparation for entering university. As of 2005, there were 1,382 general high schools with 1.25 million students. Combining two types of high schools, the ratio of middle school graduates advancing to high school was 99.7% in 2004.

Table 2: Number of students in Vocational High Schools

Yr.	Total No. of Students in High School (A)	Number of students in VHS							B/A (%)
		Sub Total (B)	Agricultural	Technical	Commercial	Fishery/ Maritime	Home Economics	Comprehensive	
1990	2,283,806	810,962 (100.0)	49,586 (6.1)	198,394 (24.5)	454,806 (56.1)	10,095 (1.2)	587 (0.1)	97,183 (12.0)	35.5
1995	2,157,880	911,453 (100.0)	32,405 (3.6)	315,093 (34.6)	448,732 (49.2)	7,105 (1.2)	4,807 (0.5)	103,311 (11.3)	42.2
2000	2,071,468	746,986 (100.0)	26,877 (3.6)	349,756 (46.8)	335,696 (44.9)	6,344 (0.8)	6,244 (0.8)	71,237 (10.1)	36.1
2005	1,762,896	503,104 (100.0)	16,846 (3.3)	187,092 (37.2)	171,903 (34.2)	4,472 (0.8)	33,857 (6.7)	88,934 (17.7)	28.5
2006	1,775,857	494,349 (100.0)	16,657 (3.4)	186,821 (37.8)	167,665 (33.9)	4,415 (0.9)	33,102 (6.7)	85,689 (17.3)	27.8

Source: MOE (2007)

One of the core characteristics of the Korean education system is the mono-path model, which allows the right to study at the tertiary level, not only for those who graduate from general high school, but also for those who graduate from vocational high school. The majority of graduates of vocational high schools want to continue on in college. Fewer want to enter the labour market (see Table 3). Those who chose to further their education numbered 22,710 (8.3%) in 1990. This grew to 111,601 (68.6%) in 2006 – a staggering increase.

Table 3: Career Choice of Graduates of Technical High Schools

Yr	Graduates	Career Choice					Rate of Further education	Rate of Employment
		Higher Education	Employment	Military Service	Unemployed	No Information		
1990	274,150	22,710	210,123	1,402	16,108	23,817	8.3	76.6
1995	259,133	49,699	190,148	333	7,582	11,371	19.2	73.4
2000	291,047	122,170	149,543	523	10,508	8,303	42.0	51.4
2005	170,259	115,164	47,227	393	4,327	3,148	67.6	27.7
2006	162,600	111,601	42,151	402	5,348	3,098	68.6	25.9

Source: MOE (2007)

The national curriculum, revised in 1997, introduced ten basic common subjects, individual projects, and special activities that cover the ten years of education. It also includes new elective subjects for the final two years of school that are designed to provide students greater choice in discovering their aptitudes and determining their future careers. The ten mandatory subjects are: the Korean language, etiquette/manners, social studies, arithmetic, natural science, practical skills, physical education (sports), music, fine arts, and foreign language (MOE, 2006).

There are several different types of institutions of higher education in the Republic: colleges and universities with four-year teacher's universities, two-year junior colleges, broadcasting and correspondence university, open universities, and miscellaneous schools with a college status (two- or four-year programmes). As of 2005, there were 419 institutions of higher education in Korea, with a total of 3.55 million students and 66,862 faculty members.

Colleges and universities in Korea operate under strict enrolment limits. In selecting students, colleges and universities make use of the student's high school records and national standardized test results. In addition to this, since 1996, certain universities have been administering a separate entrance essay test and using the test results in the admission process. In 2005, the ratio of high school graduates who advanced to institutions of higher learning was 88.3 percent for general high schools, and 67.6 percent for vocational schools.

2.3 Changing industrial needs and Vocational Technical Education

According to the changes in the national economic situation, industrial demands on the vocational education are also changing. Industrial needs of the Korean industry for VTE in the 1960s and 1970s was a quantitative demand for manpower, but industrial needs for VTE has shifted to a demand for qualitative skilled workers since the 1990s.

When systematic industrialization was introduced by the Korean government, agriculture was the dominant sector of the national economy. In 1963, 63.0% of the economically active population was engaged in agriculture, while 8.7% was in the mineral and manufacturing sector, and 28.3% in the social infrastructure and other service areas. Since then, the Republic has evolved into a predominantly industrialized nation and become a member of OECD. During this rapid growth, employment grew by 3% on average annually. Employment in the manufacturing sector in particular increased annually by 7.3%. This means that where 657,000 persons were employed in the mineral and manufacturing sector in 1963, this grew to 4,990,000 persons in 1990. The manufacturing industry has transited from domestic-market oriented production of consumer goods to the production of export-oriented machinery, electric equipment, and automobiles.


During this period, industry demanded of VTE a rapid supply of technical manpower. In order to enlarge the volume of manpower-input, industrial employees had to work many additional hours over their regular work time. The meaning of industrial-needs-orientation in this industrialization era was 'industrial socialization'. Students in Technical High Schools were 'trained' by a drill-system of equipment operation skills acquisition (lathe, milling, drill machine a. s. o) as part of an intensive workshop training concept known as the 'TWI' (Training within Industry).

However, the trend of growth in the manufacturing sector has changed abruptly into the stagnation of the demand for manpower beginning in the 1990s, followed by a slow decrease in the second half of the 1990s.

Table 4: Change of employees according to production fields (Thousand, %)

Year	Number of employees			
	Total	Agriculture & fishery	Mineral & Manufacturing	Other services
1963	7,563 (100)	4,763 (63.0)	657 (8.7)	2,144 (30.0)
1970	9,617 (100)	4,846 (50.4)	1,377 (14.3)	3,395 (31.6)
1980	13,683 (100)	4,654 (34.0)	3,079 (22.5)	5,951 (34.0)
1985	14,970 (100)	3,733 (24.9)	3,659 (24.4)	7,578 (37.7)
1990	18,085 (100)	3,237 (17.9)	4,990 (27.6)	9,898 (38.6)
1995	20,377 (100)	2,541 (12.5)	4,799 (23.5)	13,037 (40.4)
2000	22,069 (100)	2,339 (10.6)	4,502 (20.4)	15,227 (69.0)
2005	23,689 (100)	1,516 (6.4)	4,429 (18.7)	17,743 (74.9)

Source : National Statistics Administration



The crisis of the international currency deficit in 1997/98 was a turning point for the Korean economy, moving from the national to the global level. It has significantly altered the production and employment structure: the size of the service sector grew rapidly, with employment in these sectors going from 13,037 in 1995 to 17,743 in 2005, at an annual growth rate of 7%. 3/4 of all workers in the Republic are currently employed in the service area. Employment in the manufacturing sector is slowly decreasing. Interestingly however, manpower supply in the manufacturing sector is decreasing even faster than demand. Small and medium size enterprises are especially suffering under the deficit of skilled workers. Young job seekers are looking for more stable and better paid positions. There are not so many jobs in small and medium size manufacturing companies other than high-skilled jobs. Only the applicant who has company-specific skills is able to attain a satisfactory position in a company. The complicated changes in industrial needs has lead to a re-orientation of VTE.

3. Two Models of industrial needs orientation of Vocational Technical Education (VTE)

3.1 Models of industrial needs orientation of Vocational Technical Education (VTE)

Industrial needs orientation has been a concern of the central government, as a main stake holder of VTE, since the 1960s. Vocational high schools offer the initial vocational education mainly in the classroom and workshop. Additionally, there is field practice on an in-company basis for students who want to be employed after school leaving. This school-based VTE system has its weak point at the gap between the school education and industrial demand. To link the school education with the labour market demand, many approaches have been attempted in the process of industrialization since the 1960s: practice on the industrial work site, internships, cooperative training through the combination of learning places (training institute and working place), visiting industry factories, inviting master craftsmen as instructors or lecturers, and ,contract based training‘.

These approaches can be divided into two categories. The first category includes attempts to combine learning places; the other category includes curriculum or programme development approaches that have been experimented with in the boundary of school education, in order to link school education with labour market demand. I want to report on a representative measurement from each category. The one from the first category is known as the ,2+1 system‘ that attempted to combine learning place ,school‘ and learning place ,work place‘. The second category is called the ,Contract Based Training‘ (CBT for short) for small and medium size businesses.

3.2 2+1 System: an approach to combining learning places

Background

In the early 1990s, the Korean economy was once again booming. This was chiefly due to the after-effects of the Olympic Games 1988 in Seoul. However national economic experts warned the Korean government of the shortage of manpower in the manufacturing sector. The government of President Kim Young-Sam, who began his period of office in February, 1993, declared a “new five year (1993-1997) economic development plan” in May of the same year. The plan’s intent was to intensify ‘growth potentiality’. It covered a wide range of policies, including finance reform, taxes, support measurements for small and medium size enterprises, and the reform of VTE.

In order to fulfil the new development plan, the technical manpower supply needed to be expanded. To supply the required manpower, the number of technical high schools (126 schools at that time) had to be doubled. To satisfy the expected manpower requirement, the proportion of the technical high schools had to be raised from 10% to 20% of the total high school education system. It required building more than 100 new technical high schools. At that time, during an academic symposium, an influential social scientist of labour market research spoke out for a ,2+1‘ system as a new form of VTE (Park, 1993).

His idea was to solve the calculated shortage of the manpower supply through shortening the school time at technical high school, i.e. from three years to two years. It could have brought an effect of enlarging the capacity of technical high school to more than 30%. To keep the quality level of initial vocational education, he proposed an additional one-year-on-the-job-training in the work place after a student’s education was completed. Therefore it was named the ,2 plus 1‘ system. He spoke of the following advantages of such a ,2+1 system‘ (Park, 1993):

- The ,2+1 system‘ could make it possible for the vocational education system to flexibly confront not only the qualitative change in manpower demand, but also the quantitative expansion of the demand.
- Under this system, the student could start his vocational career as an apprentice in a firm during his high-school time.
- This system could link the school education with the work place.
- The Cooperation of schools and companies for initial vocational training is an international trend. Cooperative education has been successfully implemented in nations where the school-based vocational education is traditionally dominant.
- The school-based vocational education could be easily separated from work realities and could not be an effective vocational education in the era of rapid change.

Structure

The main distinction of the '2+1 system' compared to the regular course of Technical High School was that it had multiple learning places. Total attendance time was 3 years, which was the same as the regular course. But in the first 2 years, students of this system were to attend school instruction. In the following year, they went to a company, where they participated in an apprenticeship.

Table 5: Structure of the 2+1 system

Model	Regular course	2+1 system
Structure	3 year school education	2 year school education and 1 year apprenticeship
Learning contents	School: Focus on general education, vocational theory and concept with basic skills	School: General education, basic skills and vocational knowledge. Apprenticeship: Focus on the job, tasks, and skills
	- Curriculum structure*	- Curriculum structure*
	<In school>	<In school>
	General education 94 units	General Education 70 units
	Vocational theory 58 units	Vocational theory 72 units
	Vocational practice 50 units	Extra curricula 8 units
Extra curricula 12 units		
	<In company>	
	Apprenticeship** 64 units	
Total	214 units	Total 214 units

* An example of the curriculum structure of the 'Yesan' Technical High School, 1994. Learning contents in school block consisted of general education, basic skills, and vocational knowledge. And the student learned practical skills on the job in an apprenticeship block.

** Basic joint practice: 3-6 months; work adaptation practice: 6-9 months; total 12 months.

Arguments for and against '2+1 system'

There were heated arguments for and against the 2+1 system. Arguments for the 2+1 system could be summarized as follows:

- From the financial aspect, building new schools or buying equipment for school-based vocational education in the fields of high technology could be too expensive. The 2+1

system intended to solve the financial problem through the introduction of a work place which is also a learning place..

- Teachers, who were appointed to technical high schools, had limits in teaching students for highly-developed technology. The 2+1 system could give students experience in learning new technologies through an apprenticeship.
- The shortage of skilled workers in small and medium size enterprises could be satisfied by the 2+1 system.
- The practice in work site in the regular course, that had problems in quality control and assessment, could improve through a systematic intervention of the practice training during apprenticeship.

Support for the 2+1 system came largely from economists who grounded their arguments in economic aspects and labour market theory. Opposition against the 2+1 system emerged mainly from educational theorists or teachers. They argued the following:

- The emerging post-industrial society requires multi-skilled workers, who possess the basic skills to organize their work and to perform their tasks independently. To fulfil qualitative demands, students of technical high schools have to learn under more systematically organized learning environments. 2 years of schooling are too short.
- Korean businesses are not prepared to care and to support apprentices in their work places. They should have, for example, established extra training work shops, and employed instructors and counselors for apprentices.
- Problems, i. e. accidents, disputes, lack of guidance, could occur. There is no clear division of responsibility between school and company. Time would be needed to introduce the 2+1 system.
- From 1981-1995, the Ministry of Labour tried to introduce ‚cooperative training‘ to combine training in the learning place and learning in the workplace; however, this has not proven to be successful.

Participating schools

The 2+1 idea was chosen in 1993 as a reform policy of vocational education by the Ministry of Education (renamed in 2003 the ‚Ministry of Education and Human Resource Development‘). In 1994, 20 technical high schools began this programme as a pilot project, and more schools joined in the following years.

Table 6: Yearly status of participating schools and students (1994-2005)

Years	Participating schools	Participating students	Participating companies
1994	20	3,169	182
1995	68	10,470	855
1996	96	13,745	1,130
1997	90	12,922	1254
1998	45	9,110	1,928
1999	35	7,387	1640
2000	32	7,541	1,223
2001	23	5,064	468
2002	26	4,678	646
2003	25	3,598	-
2004	10	-	-
2005	17	-	-
2006	18	-	-

Source: MOE, Educational statistics yearbook, corresponding years

Schools participating in the 2+1 system increased in the first 3 years and peaked in 1996, with 96 schools which had 13,745 students and 1,130 companies. After 1997 participation began to decline: from 90 schools in 1997, to 18 schools in 2006, 45 schools in 1998, 35 schools in 1999, 32 schools in 2000, 23 schools in 2001, 26 schools in 2002, 25 schools in 2003, 10 schools in 2004, and 17 schools in 2005 (MOE, 2007). It lost its meaning as an alternative system of vocational education after 2006.

Obstacles against implementing the 2+1 system

The attempt to implement the 2+1 system over a 10-year period seemed to end without any meaningful results. At first, it appeared successful, but after 3-4 years, more than half of participating schools ended the experimental programme in 1998. Here I want to summarize the relevant research results and discuss the reasons why the 2+1 system could not take root on the ground of Korean education. My discussion is based on the results and interpretations of research which documented opinions of teachers (in technical high schools), students, field instructors in work places, and other persons in related areas (Kang, 1994; Chang & Lee, 1995; Shin and others, 1997; Jeong/Ko/Lee, 2003; Kim & Lee, 2005).

The most oft-mentioned problem of the 2+1 system was that the apprenticeships in companies had not been carried out according to expectations or regulations⁽¹⁾ (Kang, 1994; Chang & Lee, 1995; Shin and others, 1997; Jeong/Ko/Lee, 2003; Kim & Lee, 2005).

- Many participating students in the 2+1 system were pressed to work overtime or on weekends (Kang, 1994; Chang & Lee, 1995; Shin and others, 1997)
- Many companies had no appropriate training department or workshop (Kang, 1994; Chang & Lee, 1995; Shin and others, 1997)
- There were cases where students were appointed to non-relevant tasks or monotonous work (Kang, 1994)

The above problems were mentioned mainly by technical high school teachers⁽²⁾. The following table shows that putting the blame on firms was not completely unreasonable. To the question “Why does your company participate in the 2+1 system?”, 43 companies answered as follows (Table 7).

Table 7: Why does your company participate in the 2+1 system?

Answers	Frequency	percent
To use apprentices as technical workers	24	55.8
To reduce labour cost	11	25.6
To employ qualified labour in advance	6	14.0
To contribute to training competent human resource for national economy	2	4.7
etc.	0	0
Total	43	100.0

Source : Kim & Lee (2005), p. 35.

⁽¹⁾ The Minister of Labour declared a standard contract of practice in work place in Jan. 3, 1998. This is an example of contract between deputy of company and the vocational training schools or institutes. It includes term and place of apprenticeship, method of practice, duty and right of company and students, training allowances etc.

⁽²⁾ The main critiques of participating schools on the 2+1 system were following:

- Tasks of students in company had no relevance with planned curriculum.
- Companies did not offer systematically organized practical experience.
- Accidents of students were not protected by insurance.
- The status of students was neither employee nor student in company.
- The CEO had low motivation to participate in the programme

“To use apprentices as technical workers” was chosen by 24 companies (55.8%), and “To reduce labour cost” was chosen by 11 companies (25.6%). 35 companies (81% of surveyed companies) were interested in using apprentices as cheap labour rather than to train them to improve their skills and knowledge.

As to the reasons why companies typically did not look after students on the job:

- The foreman (field instructor) was overloaded with apprenticeship responsibility.
- The foreman himself had no experience in apprenticeship. He was self-taught.
- The CEO was afraid of accidents with students on the production site.

The other fatal problem in implementing the 2+1 system was the rapid increase of students who wanted to study at university or college after leaving the technical high schools. In 1990, the number of students who began at universities or colleges after leaving vocational high schools was 22,710 (8.3 % of total graduates). This number grew to 49,699 persons (19.2%) in 1995, 122,170 persons (41.9%) in 2000, and 115,164 persons (67.6%) in 2005 (Table 8). Those who wanted to take a job after leaving vocational high schools has decreased drastically during the last 10 years. In 1995, 190,148 former students (73.3% of total graduates of vocational high schools) had successfully found a job in the labour market, and in 1997 this number reached 152,047 (78.5 %). In 2006, only 42,151 persons (25.9%) took a job (Education statistics and information, 2006, <http://cesi.kedi.re.kr>).

During the last 15 years, the technical high school’s identity has shifted from a school for initial vocational education, to a school for preparation for tertiary education. This change was not planned, nor was it ever intended by education policy makers. Universities and colleges typically welcome applicants from technical high schools because of the demographic drop in the number of people in this age bracket.

Table 8: Change of career paths of vocational high school graduates (1995-2006)

Year	Graduates	Further education in tertiary level	Employment	Military service	Percent. of further education (%)	Percent. of employment (%)
1990	274,150	22,710	210,113	1,402	8.3	76.6
1995	259,133	49,699	190,148	333	19.2	73.3
1996	274,696	60,373	196,403	313	22.0	71.4]
1997	273,912	79,961	177,532	375	29.2	64.8
1998	302,416	107,824	164,075	847	35.7	54.2

1999	290,892	112,130	148,478	797	38.5	51.0!
2000	291,047	122,170	149,543	523	42.0	51.3
2001	270,393	121,411	130,968	481	44.9	48.4
2002	231,127	115,103	104,138	347	49.8	45.0
2003	189,510	109,234	72,212	251	57.6	38.0
2004	182,835	113,944	60,062	354	62.3	32.8
2005	170,259	115,164	47,227	393	67.6	27.7
2006	162,600	111,601	42,151	402	68.6	25.9

Source: Education statistics and information, 2006; <http://cesi.kedi.re.kr>

The expansion of higher education in the 1990s and its influence on vocational education is in itself an interesting theme. However it is not consistent with the theme of this workshop. Due to the unexpected stream of students to higher education, the 2+1 system has been losing its attractiveness to both students and parents.

Another difficult problem has been the coordination of two learning places. The in-company learning place was too passive. The school was responsible for finding companies where students could practice; schools were the controller, because they had a contractual training partnership with the company. The school essentially coordinated the 2+1 training programmes, while students and companies were also coordinated by the school. School teachers responsible for coordination became overloaded because the company was not motivated to follow directions from ministries, committees, or schools. The above-mentioned obstacles against implementing the 2+1 system show how difficult it is to make a work place a learning place as well. The failure of the 2+1 system may even strengthen the skepticism towards the cooperation (‘Duet’) of school and company.

3.3 Contract Based Training (CBT) – a supplementary training in technical high schools

While the 2+1 system is a model of learning place cooperation, ‘contract based training’ (CBT) is a model of company-specified training within technical high schools. There are many approaches to strengthening ‘industry-orientation’ of vocational education within Technical High Schools. For example: inviting experts from businesses to be involved in curriculum development, buying new equipment for modern technological education, recruiting experienced engineers as teachers, etc. CBT distinguishes itself from other ‘industry-orientation’ programmes in schools by the following points:

- It is supplementary training in technical high schools, beyond the regular curriculum.
- It is a programme for the voluntary student, who has contracted with a small and medium

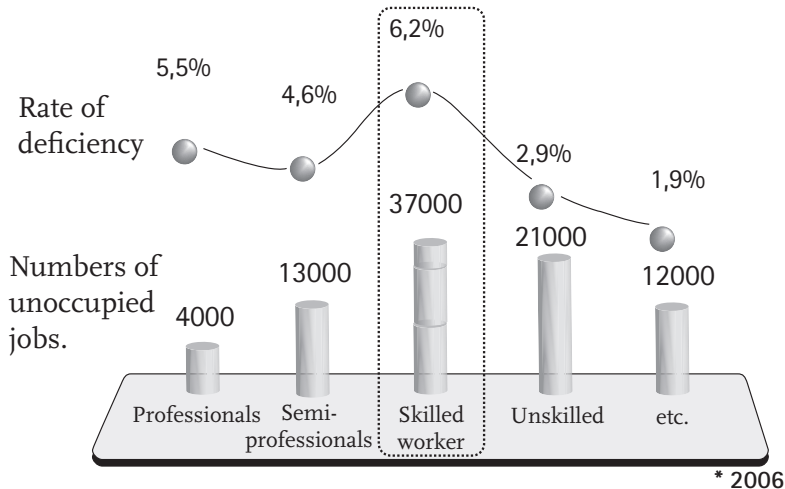
business (SMB) as a reserve worker.

- This programme is financed by Small and Medium size Business Administration and Employment Insurance.
- Financial support is linked with a regulated process of programme development and implementation.

Background & goal of the project 'CBT'

CBT was initiated not by the Ministry of Education and Human Resource Development, but by the Special Committee for Small and Medium-Size Business (SMB), even though students in technical high schools were the target population. This is an important distinction. The reason the SMB-Administration is interested in industry-oriented VTE is due to the serious deficiency of manpower supply for SMB.

Fig. 1: Manpower deficiency of small & medium-size business



Source: SMBA (2006)

The deficiency in the number of skilled workers in particular was ranked high at 6.2 % in 2006, while the rate of unskilled workers reached 2.9%. The SMB administration realized that it was a structural problem that effected the manpower flow from technical high schools to SMBs. A Special Committee for the SMB proposed a series of projects to increase the

manpower flow. The CBT can be seen as a means to revive the manpower flow. The manpower development initiative of the SMB policy was supported by the Ministry of Labour, because the unemployment rate of the youth group (15-29 years old) is 7-8% (a monthly average of 364,000), more than twice the total average (see Table 9). The unemployment of youth groups was 44% of the total unemployment in 2006. Employer organizations also complained of the quality of initial vocational education. CBT became an important issue of a cross-ministerial Conference on National HRD Policy.

Table 9: Economically active population and unemployment (Total and Youth Group) (in thousands, year-to-year, %)

Year	Total			Youth Group(15~29 years old)		
	Economically active population	Unemployed	Unemployment rate	Economically active population	Unemployed	Unemployment rate
2000	22,134 (1.9)	979	4.4	5,308 (0.3)	430	8.1
2001	22,471 (1.5)	899	4.0	5,227 (-1.5)	413	7.9
2002	22,921 (2.0)	752	3.3	5,160 (-1.3)	361	7.0
2003	22,957 (0.2)	818	3.6	5,007 (-3.0)	401	8.0
2004	23,417 (2.0)	860	3.7	4,990 (-0.3)	412	8.3
2005	23,743 (1.4)	887	3.7	4,836 (-3.1)	387	8.0
2006	23,978 (1.0)	827	3.5	4,634 (-4.2)	364	7.9

Source: Economically Active Population Yearbook


The goals of the CBT project are the following:

- To qualify students to meet the needs of industry.
- To get rid of qualitative mismatching between skilled worker demands and supply in the labour market of the SMB.
- To reform of VTE on the secondary level from the industrialization era to the knowledge-based economy era (SMBA 2006).

Organizational structure and status

The core of CBT is the provisional employment contract between the company, the school, and the student. These partners promise to uphold their obligations to each other:

- The company offers Contract Based Training headed up by the Technical High School.



Training areas, contents, terms of training and instructional materials are contracted by the company and the school.

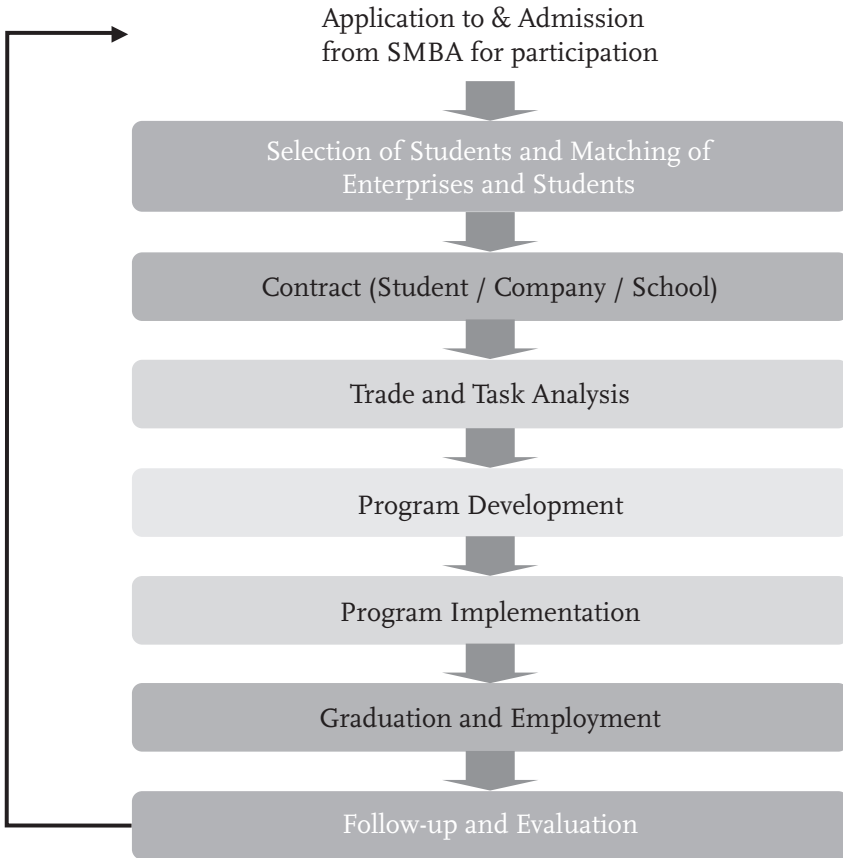
- The school has to develop a demanded training programme (CBT) and then implement it.
- The company promises to then employ the student who successfully completes in the CBT programme.
- The student (with the parents' permission) promises to take a job for 2 years with the contracted company after finishing the programme.

Of the contract partners, the main initiator is the school. The school should look for companies which want to participate in the CBT project. The school should acquire students who want to participate in the contracted training for a specific company, and then want to take a job for 2 years in the company after graduation. In this endeavour, the schools are organizationally and financially supported by governmental organizations, e.g., the SMB-Administration, the Ministry of Labour, the Ministry of Education and Human Resource Development, and the Military Service Administration.

- the SMB-Administration finances programme development and implementation. It also offers technical support for programme development and management.
- the Ministry of Labour financially supports the programme and provides training subsidy through employment insurance.
- the Ministry of Education and Human Resource Development provides schools with matching funds to buy equipment for training.
- the Military Service Administration supports the participating student by postponing the mandatory military service until the student finishes the contracted employment.

The activities of the participating schools begin with application to the CBT programme (see Figure 2). They then acquire qualified students and companies for the programme, if the application to the program is accepted by the SMB-Administration. The school has to develop the training programme through trade and task analysis. In order to enhance the relevancy of the training, school teachers are to visit the participating company and conduct interviews with staff and skilled workers.

Fig. 2: Activities Flow of Participating Schools



The organized programme should be examined by experts, who are charged by SMB-Administration to do this task. There is some training for teachers, for example, training for task analysis, training for programme development, didactics for contract based training, etc.

The total amount of CBT is generally about 250 - 350 hours, which varies according to the programme and the job. Training contents are also different from school to school. The following Table 10 shows an example of the organization of a school's CBT.

Table 10: An example of Contents of CBT

Categories of training	Contents
Company organization	<ul style="list-style-type: none"> - Products and Organigram of corresponding company - Teams and Jobs - Equipments and machineries - Contact persons - Working conditions
Job & Task	<ul style="list-style-type: none"> - Skills for performance of main job and responsible tasks - Quality control - Work plan - Keeping documentation
Methodical Competencies	<ul style="list-style-type: none"> - Decision making process - Conference - Computer & word programme - Communication and cooperation

Source: Abridged & translated on the base of Kum-Oh technical high school's CBT plan (2007)

Participating schools, students, companies, and programmes are increasing year by year, as <Table 11> shows. The Government has a plan to increase the number of participating schools, from 50 in 2007, to 80 in 2010 (SMB-Administration, 2007).

Table 11: Yearly status of participating schools, students, companies and programmes

Year	Schools	Students	Companies	Programmes
2005	13	207	66	52
2006	39	1,090	369	229
2007	50	1,520	533	252

It may be too early to evaluate the successful implementation of the CBT programme. We have only a few surveys that have researched the responses of students and teachers. According to a survey conducted by the Korea Small Business Institute in Oct. 2006, the majority of participating students registered in the middle between satisfied and unsatisfied. 35.1% were satisfied and 5.4% were unsatisfied. Teachers of the participating schools responded similarly to student on the CBT questionnaire. (Kim, 2006).

Table 12: Students' Satisfaction on CBT

	Very unsatisfied	Unsatisfied	Neither unsatisfied nor satisfied	Satisfied	Very satisfied
Number of Responses	17	27	480	230	53
Percentage (%)	2.1	3.3	59.5	28.5	6.6

Among the advantages of the CBT as noted by students, were the learning of technical competencies, adaptation competencies, problem-solving competencies, and satisfying the demands of the employer according to the KUT survey (2006). 68.1 % of respondents desired more technical content. 65.8% of participating companies demanded better-qualified students. This means that the quality of CBT should be examined in detail.

Further requirements for settlement

CBT, as a supplementary programme in the technical high school, will continue to function as long as the extra financial support of the SMB-Administration is present, and as long as the Military Service Administration allows exceptions for the trainees. The heavy administrative organizational load on teachers in the participating schools is another obstacle. The responsible teacher has to match companies and students to each other, conduct task analyses, and develop training programmes. The CBT seems like a reliable method to link the demand of industry and the contents of training, but it is very expensive and troublesome. In order to imbed CBT into the Korean school landscape, the following is required (see Kim, 2006. p. 132-136):

- The interest of companies as one of the main stakeholders in CBT should be increased, if they want to employ an able young trainee in their work place. They have to improve working conditions, and better ease newcomers into the process. It is highly recommended that a mentoring system be established for new workers. Companies should give new trainees more chances to improve their skills in the work place.
- Counseling and information services for the student's career plan should be intensified. Students have to be supported in order to develop their career path as a skilled worker.
- Governmental organizations should cooperate systematically to support participating schools, students and companies. It is recommended that a regional committee for cooperation between companies, schools and public organizations be established.

4. Reflections on industry orientation of vocational technical education in the society that has no culture of work–place learning

The meaning of ‚industrial needs orientation‘ is multi-dimensional. The first dimension is an instrumental or functional dimension. To develop the programme contents of CBT, we carry out a job analysis and construct a training program on the basis of the DACUM approach. The goal of this activity is to link the learning contents of the programme with the tasks of an industrial company. We expect that a student trained in this programme should satisfy the practical needs of the company.

The second dimension of ‚industrial needs orientation‘ is a communicational or interactive dimension. For example, when a teacher organizes his lesson plans for the CBT according to the results of the job analysis, he can carry out his instructions with a cooperative group-project.


The third dimension is related to the meaning of the organization. For example, enhancing the sensitivity of the meaning scheme of an organization, and how to deal with the organizational goals, or meaning scheme, are related to the third dimension.

Generally, the meaning of ‚industrial needs orientation‘ is functional, or practical. This presentation has focused on the first dimension. However, the second and the third dimensions should be noted by teachers and managers of schools, because the communicative and the meaning dimensions are related to basic capacities or core skills that are demanded by industries in an ever-changing society. The ‚industrial needs orientation‘ of the initial VTE seems like an almost unsolvable problem in the Republic. CBT continues only thanks to extra financial support. The chief difficulty of the ‚industrial needs orientation‘ consists in the passive participation of companies in cooperative VTE. From the failure of the 2+1 system, we have to learn that combining learning places, ‚school‘, and ‚work site‘ cannot be successful if the learning place ‚work site‘ is not motivated to contribute to the qualitative and efficient initial vocational education.

In order to offer students or apprentices a good apprenticeship, a company should develop its capacity for facilitating organizational learning. Master craftsmen, for example, would be able to mentor their apprentices. Traditionally, the work place has also been a learning place. The skilled worker was also an instructor. In a beauty salon or with a traditional dressmaker, we can find the capacity of facilitating organizational learning. We can now scarcely find it in industrial companies. I think the industrial company has a reduced need to sponsor the skill formation of new workers because of its technology level.

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Xu Ying

The Relationship between Economic Development and Vocational Training - Thoughts on Sino-Vietnamese Vocational Education Cooperation

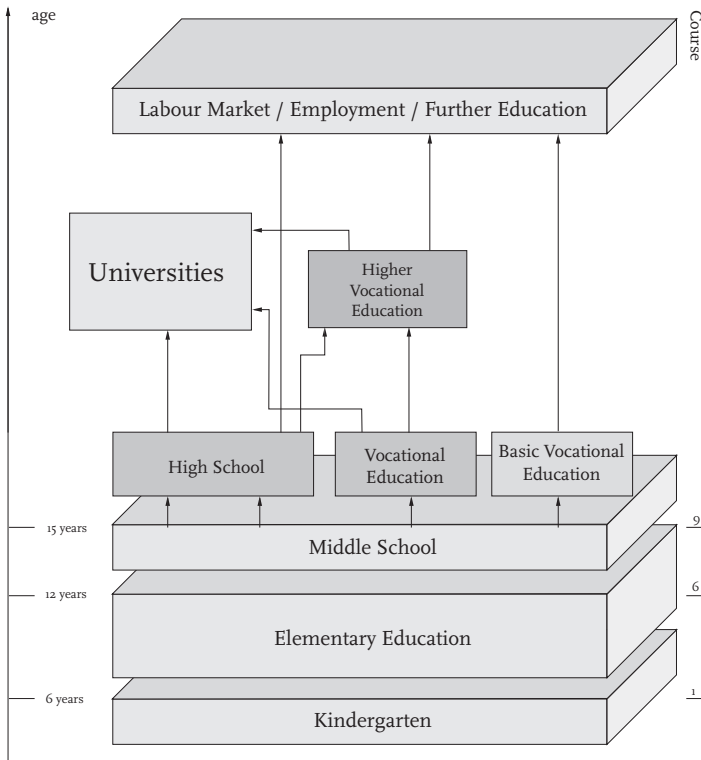
China and Vietnam are friendly neighbours, and both are developing countries. Compared to the economic development in China, Vietnam is about 10 years behind. A reform and opening-up policy began in 1978 in China, and later in Vietnam in 1986; a “socialist market economic system” was established in 1992 in China, while Vietnam set the goal for a “socialist-oriented market economy” in 2001. Our two countries are both socialist countries undergoing transformation from a planned economy to the market economy. The Vietnamese government has praised the opening up policy that has succeeded in China, and they have copied almost all of the effective economic policies in China. All this shows that Vietnam and China, with only “a narrow strip of water in between”, share the same historical background, as well as a similar social economical and cultural background. The economic cooperation between the two countries continues to grow continuously.

Regarding vocational education, China has made great progress in vocational education models, vocational education methods and instruments, and vocational education research. Much of this has been achieved with international assistance, especially from Germany. This has allowed us to establish a rather complete vocational education system. This paper will focus on the successful experiences in vocational education reform and development in China in the past 20 years with the purpose of providing reference for our partners in Vietnam.

1. Education and Vocational Education Systems in China

1.1 Education System in China

Figure 1: The Education System in China



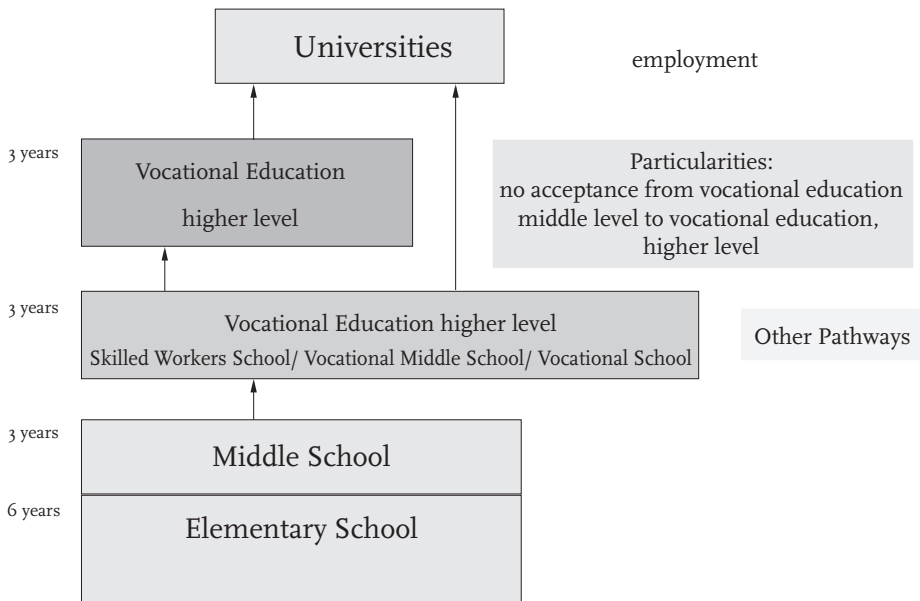
The education system in China has been chiefly influenced by the American education system, especially in regards to general education and higher education. In China, 6-year primary school and 3-year junior middle school are compulsory. Since 2006, China has implemented the policy of foregoing tuition for compulsory education; children from poverty-stricken areas also receive living allowances. There are chiefly two types of senior middle school education: general senior middle school, and secondary vocational technology education. Both run for

three years. In recent years, the ratio between these two kinds of education has somehow remained controlled at 5:5, but of course with some differences between eastern and western areas, and urban and rural areas. In higher education, there are universities strong in research, while at the same time there are higher vocational technology schools fostering practical technical workers. For research universities there is a 4-year bachelor degree, followed by 3 years for graduate degree, and then 3 to 5 years for doctoral degree. However, in higher vocational schools it is always a 3-year programme.

1.2 The Vocational Education System in China

Figure 2: The Chinese Vocational Education System

The Chinese Vocational Education System



Analysing the Characteristics

The vocational education system in China is rather complicated; it has been influenced by the former Soviet Union's educational system, and has had its own historical characteristics. Let's make an analysis from the following aspects:

1.2.1 Time

Historically there is a two-part division: before and after the Cultural Revolution. Since the establishment of the New China in Cultural Revolution, vocational education has mainly followed the former Soviet Union model, as well as the church school model before liberation. Part of the training business is organised by an educational committee. The church-school model is characterized by its medical care and health schools, and is managed by an educational committee. In the 10 years after the Cultural Revolution, technical schools and secondary specialized schools gradually revived, focusing on technical subjects. At that time, they were still under the administration of Industry and Enterprises. Until the middle of the 1980s, some normal middle schools converted into vocational schools due to the high demand for vocational education, focusing on tertiary industries such as the service industry. This kind of school was under the administration of an educational committee. Up till now, some secondary specialized schools and technical schools that once belonged to firms, broke away from their industry due to state-owned enterprise reform; now they are under direct administration of the Educational Committee.

1.2.2 Types of schools

There are three models in secondary vocational education: secondary specialized schools, technical schools, and secondary vocational schools.

1.2.3 Source of students

Secondary vocational education belongs to senior middle school education. Take Shanghai and other big cities as an example: 98% of the junior middle school graduates are able to receive senior middle schools education. Among them, half enter senior middle school and half enter secondary vocational schools to learn a vocation with the objective of becoming a qualified technical worker or staff member after graduation.

1.2.4 Higher vocational education

In the past, graduates from secondary vocational schools had little opportunity to further their education; most of them went directly into the workforce. Since 1998, Shanghai has initiated higher vocational education research and tried to establish an education crossroads, enabling all graduates from senior middle school to receive a higher education degree. After some years of experimentation, China has successfully built a higher vocational education system. The schools that were once called junior colleges were renamed higher vocational education schools, thus enabling part of secondary vocational education graduates and senior middle school graduates to further their education in higher vocational education schools. In this way, graduates of middle education have more choices: going directly into the work force, or furthering their education to become technically skilled workers. They mostly work in technical and production management positions, with the title technical worker.

2. Problems of Vocational Education in China

2.1 Curriculum System too Systematic and Theoretic

Influenced by the traditional education system, the curriculum of Chinese vocational education basically emphasizes a scientific system and theory; less attention is given to practical application. Whether it is secondary vocational schools or higher vocational schools, subject matter is based on studying theory. More attention has been given to imparting knowledge, while less was given over to practical skill training. This brought about the phenomenon of: Higher Scores, Lower Competence.

2.2 Short of Fund, Poor Practical Work Conditions

Vocational education, which requires large investments, is inadequately funded by the government and social organisations. Thus, many vocational schools do not have enough practical training places and facilities, and this has resulted in the problem of a lower rate of practical training. Many students do not have enough time and are not offered the conditions to practice what they have learned. Here is one case: in one vocational school in the western region of China, students who learn to be lathers are only allowed to operate the machine individually two times in their three-years of training. It is of course impossible for them to master the basic skills for turning, and they are not able to find suitable jobs after graduation. Certainly it is also difficult for them to “GRADUATE”.

2.3 Enterprises Rarely Involved in Vocational Education

Vocational education in China has been on a winding road. As can be seen above, secondary specialized schools and technical schools are owned by industries or businesses; thus they could receive better support from enterprises for practical training. After the Cultural Revolution, and especially after the reform of state-owned enterprises, most of the secondary specialized schools and technical schools broke away from businesses. Without the support of business, practical training has become very problematic; besides, practical training conditions in the schools are far from satisfactory in fulfilling practical requirements. Currently, there is no law stipulating that enterprises are obliged to take part in pre-job vocational education.

2.4 Short of Trainer Provision, Disintegration of Theory and Practice

Providing for trainers has always proven to be a bottleneck for vocational education reform. Most of the vocational education trainers are divided into theoretical trainers, and practical trainers. Generally speaking, theoretical trainers know nothing about practical training, while the practical trainers lack training in methodology and psychology. Although vocational education reform was implemented more than 20 years ago and further training for trainers has been carried out for several years, it is still impossible to change and improve the qualification of trainers in a short time. All in all, the trainer problem can be summarized as follows:

2.4.1 No complete concept of vocational education and training system

In the traditional model, a division of labour has been very clear; teachers are there for teaching only.

2.4.2 Not capable for surveying and training needs analysis: they receive teaching plans and syllabus from ABOVE

Teachers, not involved in any needs analysis, only have to teach according to the teaching materials they receive.

2.4.3 Lack competency for developing need-oriented teaching curriculum and teaching materials

The traditional planned economy mentality is deeply rooted; the free market is an unknown quality for these school teachers; most curriculum and teaching materials that teachers use are sent down from Ministry of Education, and teachers do not need to develop their own programme.

2.4.4 Lack the competency for understanding and analysing in a correct way

In general teachers are familiar with professional knowledge, but lack a systematic understanding of comprehensive vocational competencies such as methodology competency, communication, finding and problem-solving competency.

2.4.5 No clear understanding of teacher's role and responsibility

Typically teachers consider themselves to be better than their students; for them, students passively receive knowledge. Teachers and students are unequal during teaching.

2.4.6 Lack of competency for applying suitable teaching methods and instruments

Certain specific knowledge and operation skills are needed for a teacher to suitably apply teaching methods; in addition, more time and labour are needed for preparing a good lesson; however, most teachers are not capable of doing this, or they are too lazy to apply new teaching methods.

2.4.7 Lack the competency for combining theory with practice

Still there are a certain number of teachers who are either purely theoretical teacher or purely practical teachers.

2.4.8 No systematic knowledge and skill for teaching monitoring and evaluation

Generally speaking, teachers are familiar with teaching tools such as tests and examinations, but they are unfamiliar - or know nothing about - systematic knowledge, methods, and tools for teaching, monitoring, and evaluation.

2.4.9 Lack team spirit and team teaching ability

Traditionally teaching is done individually; experience with team teaching is a rarity.

2.5 Low Social Status and Low Income for Graduates from Vocational Education Schools

Influenced by traditional thought ,excellent learning, a prosperous official career achieved', most people still despise vocational education. Vocational school is always the last choice for students and their parents. They prefer senior middle school to vocational schools. It is widely accepted that entering senior middle school means that you have the opportunity to go onto university, which allows the student a better chance to find a job, a stable income, and social status. However, graduates from vocational schools can only get jobs in a relatively poor environment, and lower income. Influenced by this, there has been a ,Senior Middle School Fever'. Many young people, especially from big cities, are not willing to learn any sort of practical skill; this has caused a shortage of technical operators. In the field of mechanical processing, it even happens that nobody is qualified for this high-salary job.

3. Experiences from abroad to Reform China's Vocational Education

Since the 1980s, China has introduced the German vocational experience, especially the dual system into its education system. This kind of learning is carried out in several ways:

3.1 Cooperation with Germany in the field of vocational education

In the beginning of the 1990s, three vocational and technology education research institutes under Sino-German cooperation were established in Beijing, Shanghai, and Shenyang where the Germans established GTZ offices. The goal of this cooperative programme was to research the success of German Vocational Education and Training, and then decide which of their experiences can be introduced into China's vocational education system.


Table 1

Content	China	Germany
Law system for vocational education	Incomplete	Complete
Concept	,excellent learning, a prosperous official career achieved', despise vocational education	Accord with personal competency, choose different learning in a sensible way
System	School vocational education	Dual system vocational education
Curriculum system	Subjects/ emphasize	Comprehensive/ emphasizing
	theory	practice
Teaching conditions	Poor practical teaching conditions	Good practical teaching conditions
Teachers	Theory and practice couldn't be combined	With both theoretic and practical skills
Teaching methods	Single and boring	Varied and interactive
Teaching funds	Short of fund	Enterprises provide enough support
Knowledge of students	Wide and deep	Practical need oriented, less knowledge
Comprehensive competency of students	Weak	Strong
Exam and certificate	Regionally different, certificate is not universal	Common standards and exams in the country, certificate universal
Training post	Supply exceeds demand	Not enough, especially in eastern regions

3.2 Selecting some vocational education schools as pilot schools for German vocational education, probe into reform of China's vocational education from practical perspectives

The participating schools are: the Shanghai Electronic Industry University, the Shanghai Times Industry School, the Tianjin Sino-German Training Center, the Training Center of Weifang Diesel Engine Company, etc.

First, this practice has introduced new vocational education concepts and ideas to people working in the field of vocational education. That is: a vocational education lead by the



government and supported by enterprises is a prerequisite for economic development. Second, the promotion of comprehensive development and reform of the micro aspects in Chinese Vocational Education; promote teaching technology reform in schools including the application of teaching multimedia, improvement of teaching methods and teaching tools. Third, attract the attention of economic and educational organizations to vocational education so that they may take part in vocational education. And fourth, strengthen cooperation with, and support from, the labour department.

3.3 Sino-German

This is a joint programme between DSE (later named InWEnt), the Ministry of Education, and the Ministry of Commerce. Altogether 107 managerial staff and professional workers have been trained. Now, these people are playing an active role in their field, thus promoting reform and development in China's vocational education increasing the quality of available personnel for business.

3.4 P300 Project for vocational training of trainers

Through such a project, numerous professional teachers with both theoretical and practical abilities in the field of electronics and electricians, mecha-tronics, vehicle maintenance, tourism management, and foreign trade management are trained; the overall quality of teachers for vocational education has been improved.

4. Start Internal Reform in Vocational Education

4.1 Concerning guiding principle

We asked: How can the German dual vocational education system provide high-qualified workers abundantly? What can we learn from them and how can we transfer this knowledge? After our research was completed, we realized clearly that, due to different background and historical conditions, we could not copy everything from Germany; instead we needed to absorb experiences consistent with the situation in China to promote interior reform in vocational education. After more than 20 years of theoretical research and practice, we reached the following consensus:

4.1.1 From the macro level

- Only with the active participation of economic organisations and businesses can the objectives of vocational education be reached.
- Only with detailed and operative law for vocational education can we ensure an orderly vocational education;

- Only with strong vocational education research capabilities can we ensure a rational vocational education development;
- Only with a national vocational training standard can we ensure the quality of vocational education;
- Only with a strict universal exam in the country can we ensure the value of the vocational education certificate.

4.1.2 From the micro level

The dual system in Germany has a very specific training objective, i.e. students who receive training have a clear understanding of their future jobs and the job requirements; a competency-based, practice-oriented guiding principle for vocational training, and 60% to 70% practical training guarantee a high skill level of students.

This is needed to simplify complicated theoretical reasoning and theoretical knowledge that has little to do with practice; teach students the most basic knowledge required for a position. Teaching efficiency is improved in this way.

There needs to be a close combination of theory and practice that optimises teaching; application of advanced teaching techniques achieves twice the results with half the effort.

4.2 Specific measures


Specific measures to be implemented in China's vocational education reform are:

4.2.1 Needs-oriented Vocational Training

This work requires background market research work. Teaching research rooms have been established in all vocational technological schools to survey and research quantitative and qualitative needs for the market according to the development momentum of the economy. They provide timely and empirically researched suggestions for course building and teaching-content reform in schools. In this way, teaching in schools is always closely connected to the market. This has provided qualified workers that are urgently needed for economic growth.

14 types of positions needed in Shanghai: (April 2007)

1. garment sewers
2. textile workers
3. electricians
4. specialized worker in CAD/ CAM/CNC
5. professional mechatronic workers
6. auto mechanic
7. professional conference and exhibition workers
8. professional grinding workers
9. professional multimedia design workers
10. nurses for hospitals and retirement homes

- 
11. hotel and catering service staff
 12. professional metal machining workers
 13. professional information technology workers
 14. computer typist

For example, 5,859 needle workers are needed on the market while the number of applicants for these position only number 3,155 - a gap of 2,704. 260 computer typists are needed on the market, and there have been only 30 applicants.

In addition, surveys have shown that there has been a great change in the requirements of the market for professional workers: a qualified modern enterprise worker should be able to attain the following training:

- Planning ability
- Communication
- Teamwork
- Ability for finding and solving problems
- Professional competency
- Customer awareness
- Quality awareness
- Environment awareness

4.2.2 Curriculum reform and development

Based on survey results, a new curriculum system and syllabus will be developed and new teaching methods will be applied. Thus market demands are put directly into the teaching programme and teaching quality is ensured.

4.2.3 Develop suitable curriculum

Based on the result of the survey and requirements for teaching, a suitable curriculum will be developed. This means it is more modern, practical, easily understandable, and flexible.

4.2.4 Implement student-centred education and training

In the traditional teaching concept in China, teachers have had absolute authority. This has caused a one-way information flow during the teaching process; the creativity of students is inhibited, as is student participation in classroom activities. They are passive receivers of knowledge. They lack flexibility and a comprehensive vocational competency.

4.2.5 Since a student-centred teaching concept is being established, an interactive teaching method is applied

Chinese traditional teaching methods are very monotonous, mainly based on chalk and the blackboard. Although this kind of method can be used to teach theoretical knowledge for a large class, it is a great disadvantage when applied to vocational students. Usually we call for interactive teaching, with methods such as discussion, team work, role play, games, modern four-step method, project methods, survey and enterprise interview, etc. Besides, other tools such as the card method, the beamer, and brain-storming can be used to achieve a better effect.

4.2.6 Closely cooperate with enterprises to develop vocational education and training.

Although it has not been stipulated in law that businesses have to participate in vocational training, the continuous opening up of China has clearly lead increasingly more entrepreneurs to realize that human resources is the fundamental element for their sustainable development. Therefore more businesses are willing to invest in vocational education. This is a Win-Win situation for business and schools. Take Shanghai for example. The proportion of business participation in vocational education has increased significantly in the past 20 years. The Shanghai Electronic Industry School for example, a secondary specialized school for bringing up electric and electronic specialists, now cooperates with more than 100 enterprises. Businesses now participate in the whole process of teaching: from collaboration in needs-analysis, to course and curriculum development, and includes the implementation of teaching, especially practical teaching and practice in enterprises; for all these, businesses have not only provided positions for students, but also living allowances for them. After graduation, the qualified students then have a job with the firm. Not only is the teaching quality of vocational education ensured, but the enthusiasm of youngsters for learning vocational technology significantly improves.

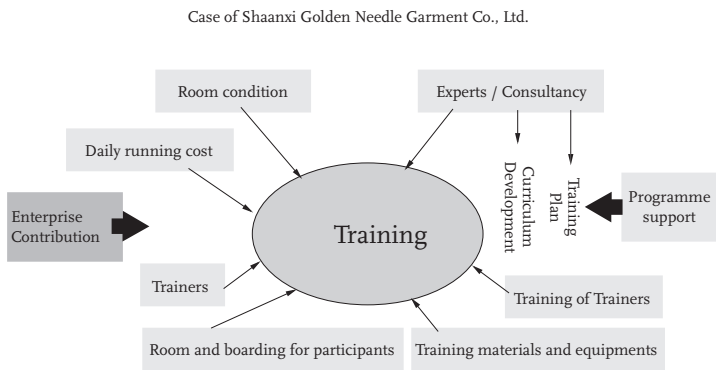
5. Typical Cases

Now I will introduce a successful case of enterprise participation in vocational education and training for providing our Vietnamese partners with some practical experience.

This case is of a medium-size enterprise with about 400 employees, seated in an economically backward city in the western regions of China. The main business is garment making and their products are sold to Germany and other European countries. Unemployed urban women and rural women, who have no basic knowledge of garment making before beginning work in the company, are the main source of employees for this enterprise. There is no training in this field in local vocational schools. Therefore, the enterprise, in order to guarantee the quality of exported garments, has to offer pre-job training for their employees to ensure the quality of exported goods. GTZ has a Sino-German Cooperation vocational

qualification and an employment promotion programme in that region. The programme adds this enterprise into its PPP (Public Private Partnership) projects aiming to support this enterprise to carry out vocational training and improve local employment situation. Below is the model of cooperation between the programme and the firm.

Figure 3: Enterprises participating in vocational training



As can be seen from the chart above, business enterprises exhibit strong enthusiasm for training. Managers of enterprises are aware of the importance of an employee’s qualification. Thus they provide training rooms, trainers, free training for participants, and include room and board. However, the firm lacks experience in training, lacks curriculum and training materials for effective training, and has only inadequately educated trainers. Under these circumstances, the Sino-German Cooperation Programme works with this enterprise, providing them with training experts to prepare training plans, conduct training needs analysis, develop curriculum and training materials. Besides, based on the training needs of the enterprise, the programme also provides training equipment and other materials to guarantee high-quality training.

First of all, a trainer team, consisting of trainers from the firm and training experts, is developed to prepare training. Their working procedure is to first conduct training needs analysis to familiarise trainers with the quantitative and quality needs of garment workers in the local regions. The following chart is part of the training needs analysis:

Case: Analysis of TNA (Training Needs Assessment) results

The following results can be drawn from the analysis:

- The difference between the competency of target group and enterprise requirements, and national standards: 77 points in theoretical competency, and 74 points in practical competency. There is space for training people with difficulty in finding employment.

- There is a great demand in the labour market for needle workers. 400 garment technicians are required in Tongchuan every year, and the demand continues to grow;
- Target groups are mainly unemployed women over 30 years age, who are mostly unemployed city dwellers and rural surplus labour;
- There are some differences between the requirements of industry employers and the requirements of the national standard. Especially with new CAD technology, there is not yet a national standard;
- Employers prefer detailed and focused professional competency;
- Employers pay more attention to training for practical operation skills;
- Employers expect better training of the vocational virtue of employees;
- Employers pay more attention to training of quality awareness, safety manufacturing, and production;
- The skill of “combined sewing” is especially important for the seamstress;
- With the development of new technology and techniques, along with the development of the local market, there are possibilities for new jobs in such areas as CAD, CAM, and modern marketing;
- Competency for finding employment is becoming more comprehensive;
- People with difficulty in finding employment and enterprises have a stronger awareness of the law;
- Target groups are happy to accept training that can upgrade their qualifications.

Job description for elementary garment needle workers

To sum up, the core skills required for elementary garment needle workers are:


The ability to work actively and carefully, analyse and introduce relevant quality and technique standard in garment making; the ability to finish one manufacturing process or several processes in an effective and qualitative way with skilful operation; ability to finish the connections and decoration of small parts; make adjustments to changing work conditions and solve problems during work; be aware of safety production; abiding by the national labour law and enterprise stipulations; show good team spirit and show respect for the work.

Second, develop needs-oriented curriculum, put the results from training needs analysis into the curriculum so that training can be closely related to market needs.

Third, develop training materials that are compatible with enterprise and industry characteristics, as well as developments in technology.

Fourth, conduct training of trainers to teach methodology, teaching methods, use of equipment, job counselling etc. In this way trainers from the enterprise can better master training concepts and training methods whereby they will be further able to conduct high-quality training by themselves.

Five, implement the training. The first training, which consists of 25 participants for a 4-month duration, is supported by the programme. The first three months is conducted in the training centre of the enterprise; the last month is training in the field. The training is participant and



practice-oriented; trainers have applied all kinds of interactive methods to implement the well-planned curriculum. According to the monitoring and evaluation results, this project has been a great success.

6. Suggestions for Germany–China–Vietnam Cooperation

China has been cooperating with Germany for more than 20 years in the field of vocational education, and we have accumulated much experience and drawn some lessons. Vietnam is also a recipient country for Germany; they have been receiving German support in vocational education for several years. But how to transfer German experience into different countries effectively is a question for vocational education workers from China and Vietnam. Therefore, I suggest the following:

1. Establish an office for Sino-Vietnamese Cooperation in the Guangxi or Yunnan Provinces to carry out cooperation and communication in vocational education and human resource development in the three countries;
2. Organise a seminar on vocational education and human resource development for Germany, China, and Vietnam to research vocational education and human resource development;
3. Organise activities to exchange educational experts and trainers between China and Vietnam so that teachers from both countries can learn from each other's advantages and make up for each other's disadvantages.




Wu Quanquan

Linkages between Vocational Education and Industry in China – The Current Environment

Today, government policy continues to guide the provision of VE in China. There is a focus on being responsive to the needs of the labour market, preparing students for occupations and employment, and combining workplace practice and production with study. There is also a focus on continuous improvement. In 1994 the National Education Conference concluded that combining workplace practice and industrial production with study was a basic tenet of socialist education.⁽¹⁾ Subsequent directives repeatedly underscored the importance of combining practical work-based training with education, close linkages between schools and enterprises, and encouraging students to participate in work-based training. They also highlighted the importance of combining teaching and scientific research to further develop, promote, and apply new technologies in training and in community service.⁽²⁾ In 2002, the State Council also emphasised the close connection between vocational skills training and professional and vocational ethics.⁽³⁾

The combination of industrial production with study is essential if VE is to adapt to the changing structure of the Chinese economy. It must develop appropriate strategies to meet the needs of industrialisation, and to accelerate and increase the development of skilled workers in order to meet these demands. Its focus on reforms, which will enable it to meet the needs of ever-changing occupations and labour markets, is of great significance. It is clear that it is this focus that will open up diverse pathways to employment, and increase student access to different jobs. In addition, a focus on training that is responsive to the changing structure of the economy will also enable the re-allocation and adjustment of human resources. This means that existing workers in the towns and cities, and workers in the rural labour force, can upgrade their skills to move into alternative jobs, thus helping to alleviate any difficult social problems.

In recent years, local governments, administration departments, and VE schools have faithfully implemented the national government's requirements regarding the combination of work and study, and collaboration between industry and education. They have promoted these



and other VE reforms, and have consequently accumulated considerable experience. At the same time, strategies for the further development of VE have been incorporated into local economic and community development plans, and in the restructuring of local industries. These strategies have laid down a solid foundation for the development of stronger linkages between industry and VE.

For example, the Tianjin government has declared that by 2006 it will have in place a high quality VE system, which is of a reasonable size, appropriate structure, high standard, and coordinated with the general education system. It will also have close linkages with leading industries in the region, and provide training which is responsive to the needs of the economy.

In recent years, the Jiangsu and Zhejiang provinces have also been promoting the collaboration of the economy, science, and education in their regions. They have implemented an integrative approach to basic education, vocational and technical education, and adult education. They have also focussed on human resource training as a way to build their advanced manufacturing industries. They have promoted the view that the primary resource for success lay in 'skilled talents'. They have also asked VE teachers to further liberate their minds, and to implement creative training solutions for the development of large cohorts of highly skilled managers and administrative workers, as well as intermediate-level and senior-level technicians and skilled workers.

National and local governments are also fully dependent on industries to assist them in analysing requirements for human resources and VE teaching. For example, in 1999, the Ministry of Education set up 33 industry-VE supervision committees. These committees played an important role in reforming curriculum and developing teaching materials according to the "Action Plan for Education towards the 21st Century". Provincial governments and national ministries of industry have also made important contributions to VE reform, and have established consultancy organizations to provide VE supervision. So far, China has achieved considerable success in developing closer ties between VE and industry.

The following models of VE-industry collaboration can improve our knowledge of the unique way that China has gone about developing these linkages.

1. The 'Mutual Cooperation between Enterprise and School' model

In this model the enterprise takes the initiative to look for a suitable school partner. In doing so, it searches for well-established VE schools that offer relevant specialised training. The aim is to improve enterprise industrial production processes, and provide benefits to both enterprises and schools. For example, the Wuxi Sangda Guolian Energy Company, jointly funded by Shenzhen Sangda Pty Ltd and Wuxi Guolian Group Pty Ltd, specialises in the development, manufacturing, and marketing of mobile phone batteries. Since its establishment

in 2004, it has been reasonably successful in designing and manufacturing such batteries. The company has chosen to work with Wuxi VWET Centre for product development. This centre was chosen because it has the required high quality numerical control equipment, teachers with specialised expertise, and students of high ability.

For its part the school has provided the manufacturing workshop and a team of five specialist teachers and field practice trainers to work as part of a project research group. The company has also given the school 250,000 Yuan, and helped to fund the costs of equipment and facilities. An agreement was signed to allocate the tasks of administration and marketing to the company, with production and technology going to the school.


During the co-operative production period, the VE Centre teachers learned about the production of mobile phone batteries through workplace practice, and worked hard to develop high quality designs. They gradually developed a set of processing techniques and operating standards, which enabled the transition from the research and development phase to the production phase. At the same time, the company employed about a dozen workers, including a number of students who were employed part-time. As time went on the company gradually established a sizable production team. At present, the company has achieved its production objective of designing and producing eight sets of dies per month. Students from the VE Centre have become the backbone of the staff involved in designing and manufacturing dies for the phone batteries. Now both company and school have experienced the mutual benefits that can be derived from collaboration, that is, technology advances and increased production.

2. The 'Training by Order' model

In this model of collaboration, the school chooses its enterprise partner, and an agreement to provide human resources training is signed. The enterprise is involved in school management, and provides assistance with funding, equipment, and on-site practice. It also provides a number of specialist teachers. The school establishes specialised courses and training programmes, develops curriculum to meet the business's training objectives, and organises the necessary courses. The school also participates in the development of new technology and products, and provides in-service training and consultancy services.

Zhenjiang City Vocational Education Central School in Jiangsu Province has been very successful in adopting this model of collaboration. The school has taken the initiative to select its enterprise partner and has focussed its activities on the provision of customised human resources training. The school has been able to provide a service, which was especially needed in the labour market, and selected an enterprise that had sound administration systems in place and needed to train large numbers of technicians.

To establish the initial collaboration, the school and the enterprise were engaged in joint dialogue. Together they developed the training plans, which identified the level of knowledge and specialised skills required, the relevant professional ethics that were to be observed, and the



specific responsibilities of the school and the enterprise. The school then invited the enterprise to participate in school administration, monitor teaching quality, and oversee the achievement of training goals.

In addition, the duties, rights and interest of the both parties were clarified. Firms selected student trainees on the basis of school recommendations, and on their academic results, ideological and moral standards, psychological makeup, and intellectual abilities. At the same time, they also established some incentives to encourage student participation in the programme. These included scholarships for talented students and partial tuition fee remittance for other students who obtained high academic results and demonstrated competent performance. These incentives also included paid field placement work, and decreased or waived the post-graduation probationary periods.

This close school-enterprise connection also proved beneficial for the students. It provided students with community and industry networks, which they could access immediately upon graduation, and provided a vehicle for the school to offer better service to industry and to the community.

3. The 'Zero Period of Adaptation' model

In this model of collaboration the VE School identifies the knowledge and skill requirements of the enterprise, and then makes full use of the enterprise's resources to provide an appropriate training program to produce graduates for industry who can move directly into positions without any other specific orientation requirements. This includes restructuring courses and curriculum, training new types of specialist teachers, and establishing field practice placements within and outside the school.

Heilongjiang Agricultural Economic Vocational College is a successful example of this model of collaboration. This college is over 50 years old, and is well equipped in terms of teaching expertise and learning resources. The school has also been very successful in establishing close linkages with international organisations and local agricultural enterprises to provide training which not only meets the needs of local economic development, but also prepares students to move directly into production positions once they leave the college. It has made full use of enterprise resources to deliver this training, and has involved school teachers in enterprise training, and enterprise personnel in teaching at the school. It has also established joint mechanisms for conducting scientific research.

The major features of this collaborative model are employment preparation, training by order, and advanced skills training. The college has been able to successfully identify what the market requires by conducting extensive studies of labour market needs, and specialist knowledge and skill requirements of different occupations and jobs. It has then been able to devise comprehensive and specialised programmes to meet these needs. This has included the successful integration within training plans of both theory and enterprise-based field practice, and the implementation of an approach to training, which recognises both the needs of students and the needs of

enterprises.

The college has also had to implement strategies for the development of a new type of professional teacher able to integrate the concepts of industrial production and teaching. In addition to developing these dual qualities in teachers, the college has also implemented strategies for the development of highly skilled part-time teachers in specialised teaching areas. To do this the college has invited renowned professionals and high-ranking managers to deliver lectures at the school. These lectures have covered topics relevant to specialised subjects, professional ideals, and enterprise culture. The college has also strengthened its dual focus on scientific experimentation and field practice so that students are able to develop the required specialist skills which will prepare them for effective employment.

To implement its aims for a ‚zero adaptation period‘ for its graduates, and to meet the demands of the labour market, the college has had to change the way teachers think about their roles, by designing and modifying specialised curricula, as well as adapting to innovative and modern multi-media teaching methodologies. It has also implemented a student-focussed approach to training, where the students talents are developed to match the requirements of specific jobs, and students are able to study for vocational qualifications.

The college is especially focussed on the integration of industrial production and teaching to ensure that both are enriched by the experiences of the other. For example, the school and the school-run agricultural business exists on the same site with school buildings situated toward the front, and the agricultural enterprise at the rear. The goods produced for profit by the enterprise are directly related to the subject specialisations of the school, while the application of modern and high-tech equipment and agricultural technology in production provides important feedback for curriculum development, and useful services for local farmers. This concept conforms to the principle of ‚school at the front, and factory at the rear.‘

4. The 'Combined School-Factory' model

In this model the VE School uses its specific expertise and resources to run a combined school-factory enterprise, which meets the needs of the local economy.

In this way the needs of both teaching and industrial production are fulfilled. In being focussed on industrial production, teachers help to increase school profits, while the experience they acquire in this process, in turn, provides them with useful information for further developing their teaching expertise and improving the content of curriculum.

A practical example of this model is provided by the Shuanglou Vocational School in Hai'an, Jiangsu Province. In 1958 this school became the first agricultural vocational high school to be established in China. With the introduction of economic reforms and the open-door policy, the school focused its activities and attention on meeting the needs of the local economy. It modified its approach to education by incorporating new developments in agricultural technology and practices into the curriculum, and reforming its administrative processes to establish a new

vocational pathway based on the combined school-factory model.

The philosophy driving this approach can be encapsulated in the principle: 'not rich without teaching and not alive without plant and machinery'.

Rapid advances in technology and increased availability of building materials and machine equipment has also increased the demand for skilled labour in the local area. The school was able to respond to this demand because it had a long history of working in the engineering field, and it had the necessary teaching expertise. In 1986 it introduced the first 'automated control machine plant', and later established plants for 'electronic equipment', 'vapour engineering equipment' and 'heat-treatment equipment'.

To ensure the smooth integration of teaching and industrial production, the principal of the school also became the chairman of the board of directors, and plant director of both plants. In this way, the school was able to administer the plant (factory), and the plant in turn was able to provide a nurturing environment for the school. These activities promoted progress on both sides.

The guiding principle was 'internal extension, external connection'. 'Internal extension' referred to the creation of a 'research and development group' made up of a highly competent teaching staff; 'external connection' referred to the establishment and maintenance of channels of communication and cooperative networks with external work units. The 'combined school-factory' model promoted the further development of VE, and focussed school attention on both teaching and scientific research.

Shuanglou Vocational Senior High School represents a profitable and comprehensive approach to VE. The school established the 'Hai'an County Sanwei Group Company', which incorporated the different plants into one group, or corporation. This multiplied profits, strengthened the campus economy, and improved school conditions. In addition, these successes also led to increased VE programme offerings, and the school has increased the number of classes by five classes each year for the past two years. It has also diversified the type of courses it has provided including general secondary specialised school programmes, vocational secondary specialised school programmes, vocational senior high school programmes, and short-course training programmes.

Its students are also highly valued by the community for their technical, administrative, and management skills and the school is admired not only for its training expertise in specialised fields, but also for the high quality of its teaching in political and ideological areas. It is also a popular institution for students, and graduates are highly valued by employers. During the past three years, over 300 of its students have won prizes in various county, city, and provincial skill competitions. During the last two years, 100% of the graduates of finance and accounting have achieved the national expert standard, and all school graduates have been able to gain employment, with nearly all of them (93.5%) finding jobs in their specialised fields.

5. The 'International Cooperation' model

In this model of collaboration the school aims to improve the quality of its teaching, and provision

of services to the local economy, by reflecting on and utilising the VE experience of foreign countries to improve its own operation, and to establish networks for international co-operation and exchange.

The Beijing Transportation and Communication School provides an example of this model of collaboration. The school, which is also a key vocational school in Beijing, is one of the first of its kind to set up linkages with overseas educational institutions, experts, and businesses. The school's mission was to provide training that would assist in the development of the Beijing economy and its transportation and communication industries. It also aimed to become a state-of-the-art transportation and communication institution. It modernised its traditional approach to VE by importing and utilising overseas philosophies and practices, focussing on the vocational aspect of training, and reforming its traditional credentials-based education system. In doing so it strengthened its collaboration with local and international enterprises.

In 1994, the school established linkages with the Japanese Toyota company in China to set up a Toyota T-TEP skills training school in Beijing. For the past ten years it has imported educational theory, curriculum, training methodologies and equipment, and teaching materials. These collaborative efforts have played an important role in reforming curriculum used for providing skilled labour to the automobile industry. The school has established partnerships with Japanese, German, British, American, and Dutch companies (Toyota, BASF, Quivira, Dupont and Sikkens).

In 2004, the Toyota Company recognised the school as a T-TEP model school. In 2000, the school also developed and delivered the 'automobile design and decoration' course jointly with the German BASF company, which had already established its Beijing office and training centre at the school. In 2001, the school collaborated with the British company 'Quivira' Education Development Pty Ltd to establish and deliver courses in 'automotive sales', 'sales management', 'international trade', and 'overseas marketing'.

At the same time as it was strengthening its international networks, the school also extended its linkages with domestic enterprises. It established regular arrangements for students and teachers to undertake field practice placements in a large number of enterprises. For example, the school has established a stronger relationship with the Beijing Auto Repair Company, one of the top 500 enterprises in China. The company helped the school to set up a modern automobile maintenance and repair centre. It also established a 'Beijing Transportation Education Award', which is granted to outstanding teachers and students. The school also helps the company in its recruitment by identifying and selecting outstanding graduates for employment. Working with the company in this way provides opportunities for the school to better understand industry needs, implement appropriate technical training, and consolidate the position of the school's technical training department.

In conjunction with BASF the school has also opened the 'Yaliang' Project Consultancy Company. This company provides consultation on the technology of car painting and repairs, and car painting and repair services for a fee. It also sells paint products and helps small businesses to refurbish their automotive repair workshops. In doing so it ascribes to the principle of 'factory

in the front, and school in the rear’.

On the tenth anniversary of its cooperation with the Japanese Toyota Company, the school set up the Toyota Class to deliver customised training for businesses. Upon graduation, students are awarded a technical certificate, which is recognized by Toyota. This enables them to take up employment in Toyota 4S shops and maintenance workshops. The school has thus achieved its goal of providing customised training.

The school also aimed to extend curriculum reforms by adopting the German dual system concept of training. In 1999 it began a pilot programme, and the first students from this programme graduated in 2003. Based on their success with the dual system, and the Toyota programmes, the school has commenced a new round of teaching reforms and technical experimentation. The school has confirmed the integral role of ‘field practice’ in the German dual system, and the importance of constantly reviewing teaching plans to adapt overseas practices to the Chinese situation. The school has implemented the ‘Zhu Zhou Bing Xing’ reforms to ensure that training and education are focussed on the development of vocational skills and abilities. This coincides with the VE philosophy in advanced economies like Germany and Japan. However, schools were to be the major arena for VE in China with theoretical subjects supporting the training received in field practice placements, much like the situation in the United Kingdom.

The school has achieved considerable success. Its curricula are closely related to the needs of the labour market, and graduates are valued by employers. This has increased the reputation of the school among potential students. For the past five years the school has achieved a top ranking in student recruitment among similar schools in Beijing.

In summary, the Chinese experience in recent years underscores the importance of linking VE with the development of the economy, and at the same time providing mutual benefits for both schools and businesses. However school-business collaborations may also be dominated by government, schools, or the business. These three forms of collaboration may run independently of each other, or alternate in importance at different stages of the relationship.

Where the government takes the lead is in its responsibility for the overall management, planning, and coordination. It administers central control of finance and resources, and promotes the importance of healthy cooperative action. Where the school takes the lead is in its responsibility for developing training by order programmes, providing services for enterprises, and promoting mutual benefits. It administers school-run enterprises, and concentrates on both production and teaching. Where business takes the lead is in its responsibility for initiating the collaboration, and using the expertise and resources available to the VE school to produce quality outcomes.

⁽¹⁾ Comrade Jiang Zemin’s speech at the national educational conference.

⁽²⁾ Ministry of Education, “Suggestions on Carrying out Qualities Education and Deepening VE Teaching Reform”, 2000.

⁽³⁾ State Council, “Decision on Vigorously Promoting VE Reform and Development”, 2002

Chana Kasipar

TVET: Thai Experiences

Historical Summary

1. The need for modern technical personnel started during King Mongkut's reign (Rama IV 1804-1868) when the king brought science and technology into Thailand. His son, King Chulalongkorn, introduced the railway, water works, and power plants. These obviously required skilled workers, technicians, and engineers.
2. As far back as 1902 the realization that students should be given the opportunity to take either a general or special subject has been accepted. However the tendency to seek non-technical employment persisted due to the status attached to employment in civil service occupations. In an attempt to remedy this and the need for skilled manpower, King Rama VI opened the ,Pohchang School, in 1913 which offered training in three areas: agriculture, arts and crafts, and commerce.
3. In 1932 another major heavy construction project, the Memorial Bridge across the Chao Praya river was built. A group of naval officers then realized that industrialization would help the economic development of the country, and therefore technical training was necessary. Therefore they founded the first engineering school. The school's course involved a two-year programme with practical training at the Naval Dockyard. In 1935 this school was transferred to the Ministry of Education to become the Pathumwan Engineering School. Between 1930-1939 a number of agricultural schools were built in various parts of the country. In 1933 the Utaintawai Construction School was established. After 1937, vocational schools, carpentry schools for boys, and domestic science schools for girls were opened all over the country.
4. In 1952 the first technical college was established with aid from the USA. This was the Bangkok Technical Institute, and later another three were opened in different regions, namely the Southern Technical Institute (1954), the North-Eastern Technical Institute (1956), and the Northern Technical Institute (1957).
5. In 1958, the South-East Asian Treaty Organization (SEATO) helped to improved all carpentry schools and transformed them into industrial trade schools for skilled workers in six trades: Automotive, Machine Tools, Welding and Sheet Metalwork, Construction, Electricity, and Electronics. During the same period another three engineering schools were opened, namely the North Bangkok, Nontaburi, and Lopburi Engineering Schools.
6. In 1959 the Federal Republic of Germany gave technical assistance to set up the Thai-German Technical Institute. In 1960 the Nontaburi Institute of Telecommunication was established with aid from the Government of Japan. In the same year, the Thonburi Technical Institute was set up, and between 1963-1970 it received technical assistance from the United Nations

Development programme. These three technical institutes combined to become King Mongkut's Institute of Technology in 1971 and came under the responsibility of the Ministry of University Affairs. The Federal Republic of Germany also helped to set up another Thai-German Technical Institute in Khon Kaen in 1965, as well as the Patumthani Agriculture Training Center in 1968. A year later the Austrian Government gave aid to set up the Sattahip Technical School.

7. During the 1970s, there was an explosion in the number of vocational students and many of them were capable of further study. Only King Mongkut's Institute of Technology North Bangkok (KMITNB) offered some places for them to study further for a degree. The government then transferred 28 institutes to the Department of Vocational Education (DOVE) to form the Institute of Technology and Vocational Education (ITVE) in 1975, which was then granted the legal right to grant the bachelor degree. The name was subsequently changed to the Rajamangala Institute of Technology (RIT).
8. The National Education Act of 1999 called for sweeping changes in the way education was to be organized, administered, and financed. There are now five departments at the Ministry of Education, i.e. the Permanent Secretary Office, the Office of Education Council, the Office of the Basic Education Commission, the Office of the Vocational Education Commission, and the Office of the Higher Education Commission.
9. The Department of Vocational Education (DOVE) has now become the Office of the Vocational Education Commission (OVEC). Private vocational schools are now under the Private Education Office, a part of Permanent Secretary Office. The Rajamangala Institute of Technology (RIT) has been divided into nine Rajamangala University of Technology (RUT).
10. OVEC, formally known as DOVE under the Ministry of Education (MOE), was founded in 1941 to take responsibility for the provision of vocational and technical education in nine areas: agriculture, industry, fishery, home economics, commerce, ICT, textile, arts, and tourism. OVEC's formal school system offers two levels of vocational education: (i) skilled level: a three-year programme, grade 10-12, resulting in a Vocational Certificate; and (ii) technician level: a two-year programme for students with a vocational, certificate, grades 13-14, resulting in a Higher Vocational Diploma.
11. RUT, formerly known as RIT, and even earlier as the Institute of Technology and Vocational Education (ITVE), was founded in 1975 to provide students graduating from vocational and technical schools with an opportunity to further their education at bachelor degree level. Two years after the formation of the institute the MOE decided to transfer 28 institutes and colleges from DOVE to ITVE. These 28 institutes have been renamed as campuses of ITVE. The 28 campuses comprise ten agriculture, ten technical, four commercial, three home economics, and one arts and crafts institutes. RIT offers a wide variety of courses at the certificate, diploma, and bachelor levels. Some of the diploma graduates continue two more years to obtain a bachelor degree. RIT has been upgraded to become 9 RUT in 2005, which offers graduate degrees.
12. KMITNB was established in 1959 as a result of an agreement between the Government of

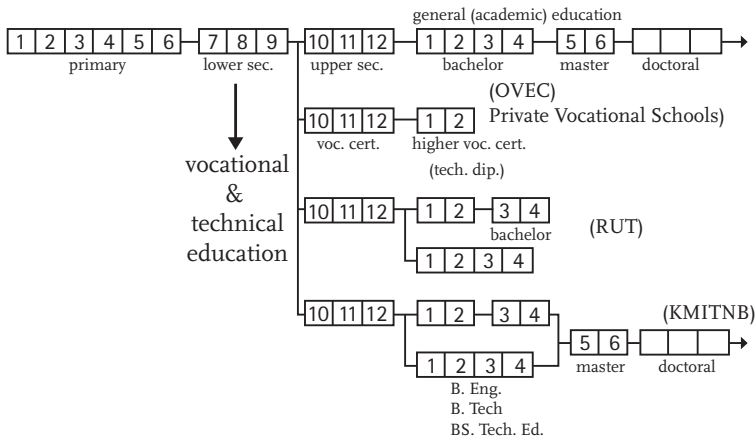
Thailand and the Federal Republic of Germany. Aside from degree courses, KMITNB offers vocational certificate and technical diploma programmes in industrial technology. Graduates can go on to further education up to the doctoral level.

13. Private vocational schools are under the Permanent Secretary Office which oversees all privately owned educational institutions from kindergarten to the pre-university level. It controls standards for staff levels and qualifications, insures minimum standards for facilities, site size, and maintains the quality of offerings.

The System

14. the vocational education system in Thailand is shown below.

Figure 1: The vocational education system in Thailand



15. Formal vocational education begins in grade 10, when students choose between academic (general) education and vocational/technical education. Academic-path students can go to university after grade 12 to attain a degree. Vocational stream students study for 3 years (grade 10-12) for a vocational certificate to become skilled workers in the labour market, but the majority continue to study for two more years to obtain a higher vocational diploma as a technician due to the higher economic rewards. These certificates and diplomas are offered mainly by public colleges under OVEC and private vocational schools. After obtaining the technician diploma, students can study further for the bachelor degree at RUT; and for the bachelor, master, and doctoral degrees at KMITNB. Admissions at all levels are done through competitive entrance examinations.
16. Non-formal vocational education and training are usually short courses to train semi-skilled, and specifically skilled workers. These are also to fill gaps in the preparation of post compulsory school leavers; and to upgrade and update the skills of workers. Non-formal

education and training are mainly conducted by the OVEC, the Office of Non-formal Education under the Ministry of Education, as well as at other ministries e.g. the Department of Skills Development under the Ministry of Labour.

Recent Development

17. The National Education Act of 1999 (NEA) calls for the development of separate legislation on vocational education and training. The Vocational Education Act has already passed the lower house of the parliament. But with the present situation, it is waiting to go back to the interim house of parliament.
18. In the National Education Act of 1999 (NEA) there are now five departments at the Ministry of Education. One of these is the Office of the Vocational Education Commission (OVEC). In June 2004, the Cabinet appointed an Vocational Education Commission consisting of 32 members. The responsibilities of the Commission are to set policy, standards, cooperation between public and private VET institutions, and monitoring the implementation of the VET system.
19. In the NEA, quality standards and assessment must be established. The internal quality assessment consists of 6 standards: learners and graduates, curriculum and provision of teaching/learning, students' extra-curricula activities, professional services for society, innovation and research, and leadership and management. There are 34 indicators.
20. For external quality assessment, there are six standards: internal quality assurance, quality of graduates, management of learning and teaching in vocational education, innovation and advancement of knowledge on the part of teachers and students, academic services to the community and society, and administration and management. There are 23 indicators.
21. For the public VET sector in 2006, there are 404 colleges, with 678,558 full-time students, 745,349 trainees attending non-formal, short courses, and 16,581 permanent teachers. For the private VET sector in 2005 there are 406 vocational schools, 2,720 part-time non-formal institutes, 380,000 full-time students, 514,539 part-time trainees, and 25,935 teachers.

VET Reform

22. The NEA calls for education reform. The Education Reform Committee of the Office of Education Council (OEC) passed a resolution on education reform on 6 June, 2003. The Cabinet gave approval on 2 December, 2003.
 - 22.1 The VET reform consists of:
 - Re-orientating
 - Re-organizing and
 - Re-financing and re-mobilizing of resources.
 - 22.2 Re-orientating consists of:
 - 22.2.1 Establish national manpower planning
 - VET as national agenda
 - NESDB sets national plan and strategies for the country competitiveness

- OEC sets policy for the proportion of general and vocational streams, proportion of public and private vocational colleges' students
- Vocational Education Commission (VEC) sets policy on VET
- Private sector provides information on needs, skill gap, trend.
- 22.2.2.1 Develops and promotes Thai Vocational Qualification (TVQ)
 - NESDB sets policy for coordination and initiates establishment of TVQI
 - VEC coordinates and facilitates implementation of TVQ
 - Private sector strengthens each sector to develop occupational standards, promotes knowledge and understanding of TVQ.
- 22.2.2.2 Promotes learning reform
 - Demand driven
 - Lifelong learning
 - Open and flexible learning
 - Entrepreneur development
 - Cooperative education and training
 - Competency-based training.
- 22.2.3 Strengthen R&D
- 22.3 Re-orientating consists of:
 - 22.3.1 Administrative reform by
 - Clustering and networking
 - Resource mapping
 - Establishes areas of excellence and centres for vocational excellence
 - establishing a level playing field.
 - 22.3.2 Develops and promotes stakeholders collaboration
 - Partnership and networking.
 - 22.3.3 Develop quality system
- 22.4 Re-financing and re-mobilizing of resources consists of:
 - 22.4.1 Reform of financing by performance-based budgeting
 - 22.4.2 Reform of personnel
 - Develops standards for VET teachers and administrators
 - Staff development (both initial and in-service)
 - Exchange of staff between public and private sectors
 - Promote real practical experiences in various enterprises for teachers
 - Promote pay for performance system.
 - 22.4.3 Reform use of media and technology
 - Promote use of ICT for VET and lifelong learning.

VET Innovation

23. In present and future developments, there is competency-based education and training; development of new vocational qualifications, known as Thai Vocational Qualification

(TVQ) and education and training provided by others, e.g. families, community, private organizations, professional bodies, and industry.


24. In 2006, the Vocational Education Commission established ministerial regulations for criteria and standards for competency-based curricula for short courses, vocational certificates, and technician diplomas as open and flexible learning.
25. A new qualification called the Thai Vocational Qualification (TVQ), was planned several years ago as a joint project with Australia, the UK, and France. This is a vocational qualification based on occupational standards of competence. Australia calls it competency standards. TVQs are work-related, competence based qualifications. From the research studies they will be divided into seven levels which are equated to:
 - Level 1 Foundation skills in occupations
 - Level 2 Operative or semi-skilled occupations
 - Level 3 Craft or skilled occupations
 - Level 4 Technician and supervisory occupations
 - Level 5 Technical and junior management occupations
 - Level 6 Professional and senior management occupations
 - Level 7 Specialists and top management occupations.
26. The joint project with Australia started in 1995 to develop competency standards for 4 occupations: automotive, electronics, retails, and plastics. This was the first time that competency standards (or occupation standards as they are called in the UK) had been developed in Thailand. Competency standards are statements of the skills, knowledge, and attitudes expected of people in various positions and roles in the workplace. Competency standards documents do not describe the levels of competency for specific occupations. They describe the progression of competency from the performance of simple tasks to the performance of more complex tasks.

The project with Australia terminated in 2001.

27. The project with the British Council, UK, started in 2000. The aim of the project was to develop occupational standards with functional analysis method, using the retail occupations as example. The final aim was to develop TVQ based on occupational standards, which specify the standards of competence people are expected to reach in a particular occupational area, including knowledge and understanding. Occupational standards identify what people have to do to show that they are competent in a job. The project with the UK still continues, but will be extended to include the neighbouring countries of Vietnam, Laos, and Cambodia.
28. The project with France started in 2001, called Thai-French Continuing Vocational Education. The objective was to transfer occupational standards into competency-based training standards in the two occupations of industrial maintenance and automation. The accreditation of prior learning, recognition of prior learning, or the validation of prior learning system has also been developed.
29. In the National Education Act 1999, section 12, it is states that “other than the state, private

persons, and local administration organizations, individuals, families, community organizations, private organization, professional bodies, religious institutions, enterprises, and other social institutions shall have the right to provide basic education as prescribed in the ministerial regulations”. In the past few years, several enterprises have taken up this scheme, e.g. the Somboon Group (Autoparts), S&P (Food & Restaurant), Seven-Eleven (Retail Convenience Stores), Di Star (Electrical and Electronics Appliances), SSG (Steel), Train Time Test Co., Ltd. (Training Centre for Sahapat Group), and Royal Cliff Beach Resort. These enterprises provide basic education for the staff, their families and community in the neighbourhood. They also provide VET training for their staff.

30. Some companies set up private vocational schools or colleges, e.g. Toyota, CP, Honda etc., to train their staff or students relevant to their needs.
31. The dual system in Thailand really started in 1959 when the Government of Thailand and the Federal Republic of Germany agreed to establish the Thai-German Technical Institute. It is now known as the King Mongkut’s Institute of Technology North Bangkok. It used to train skilled workers in 4 areas: automotive, machine mechanic, electricity, and industrial piping. The theory was conducted at the institute for one day a week, while the practical work was done in the company and at the institute for 4 days a week. The institute became well-known for producing the most competent graduates who could perform real work. Five years later, the German project expanded to produce industrial technicians within the same concept. Ten years later the cooperation project brought in training technical teachers and practical engineers. In 1965, the German Government also provided a cooperative to establish the Thai-German Technical Institute, Khon Kean, now known as Rajamangala University of Technology Isan.
32. Thailand – through the Department of Vocational Education (DOVE) and now known as OVEC - and the Federal Republic of Germany, through the GTZ, started another project called “Introduction of Dual Vocational Training (DVT)” in 1988. It expanded for four phases and terminated in 2002.
33. In the final project progress review in 2002, the following achievements were confirmed by the review team:
 - DVT is applied nationwide in different occupations, and on different levels, i.e. the certificate and diploma as one adequate format of formal vocational education.
 - Over the years the number of DVT students, participating colleges, and companies has significantly increased.
 - The DVT- Extension Service has been successfully established. It has become a major and indispensable instrument (key success factor) at the implementation level.
 - The process of capacity building has been planned and implemented successfully.
 - The project manages to develop a unique Thai DVT concept which serves Thailand’s needs. The DVT concept is unique because it combines local policies, requirements, conditions, and expertise with suitable elements of German experiences in dual vocational education.

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34. For cooperation with the main stakeholders in Thailand, i.e. the Federation of Thai Industries (FTI) and Chamber of Commerce, both organizations have established Human Capacity Building Institutes. They collaborate in dual vocational training and cooperative education. They act as key partners to develop Thai Vocational Qualifications, especially by strengthening different sectors to develop occupational standards or competency standards. Several enterprises have set up their own schools, colleges, and training centres to train their own or new trainees. There are projects for provincial FTI to determine skill shortages and skill gaps in their provinces. These data are vital for the development of strategies for manpower planning and others.

Conclusion

35. In the past few decades, vocational education and training in Thailand has made much progress. At present, there are more than 800 public and private institutions providing formal VET programmes, and many training providers in the private sector, consisting of more than 1 million participants in formal VET, and more than 35 million in the workforce. However, there are still several issues that need to be addressed. We could learn from our beloved Thai King, King Bhumibol who has preached and practiced for years the “sufficiency economy”. We could also learn from the experiences of others, in either developed or developing countries. Lord Leitch in his Review of Skills : Prosperity for all in the global economy-world class skills, in December 2006 for the UK, stated that “economically valuable skills is our mantra.” Finally in the Bonn Declaration (resolution of a meeting organized by UNESCO-UNEVOC), the preamble states that “....technical and vocational education and training (TVET) is the master key that can alleviate poverty, promote peace, conserve the environment, raise the quality of life for all, and lead to sustainable labour forces.”

InWEnt – Internationale Weiterbildung und Entwicklung gGmbH

Capacity Building International, Germany

InWEnt – Capacity Building International, Germany, stands for the development of human resources and organisations within the framework of development cooperation. InWEnt offers courses that cater to skilled and managerial staff as well as decision makers from business, politics, administrations and civil societies worldwide.

With the education, exchange and dialog programmes for approximately 55,000 persons per year, InWEnt constitutes the largest joint initiative of the German Federal Government, the Länder (German federal states) and the business community. The centre in Bonn and 30 other locations in Germany and abroad employ roughly 850 staff.

The organisation commands a total annual budget of approximately €130 million. The Federal Government is main shareholder and represented by the Federal Ministry for Economic Cooperation and Development (BMZ), which is also the main financial contributor. Approximately 40 percent of the budget is from further commissioning bodies, in particular the Federal Ministry of Education and Research, the Foreign Office (AA), the Federal Ministry of Economics and Technology, and, increasingly, the European Union (EU) as well as various further multilateral organisations. Main cooperation partners are the KfW Bankengruppe (KfW banking group), the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (German Technical Cooperation) and private business foundations.

InWEnt was created in 2002 through the merger of Carl Duisberg Gesellschaft e.V. (CDG) and the German Foundation for International Development (DSE). In keeping with the tradition of the predecessor organisations, both Länder (German federal states) and German business are shareholders and thus ensure that InWEnt is firmly anchored in society.

Within its business fields, InWEnt amalgamates the decades of expertise and regional experience contributed by CDG and DSE. The methodological repertoire is structured along broad lines, making it possible to customise modules to fit the specific requirements of customers and tasks and provide appropriate solutions. The employment of new media permits the development and implementation of innovative knowledge management methods, the launching of international virtual learning communities and the promotion of multiplier systems.



UNESCO-UNEVOC International Centre

Our Profile

The UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training was established in Bonn, Germany, in September 2000, based on a Host Country Agreement signed earlier that year between UNESCO and the Government of Germany. The Centre was inaugurated on 8 April 2002.

The Centre seeks to help UNESCO's 193 Member States strengthen and upgrade their systems of technical and vocational education and training, and to promote a greater availability of skills development options so as to implement Article 26 of the Universal Declaration of Human Rights and UNESCO norms and standards concerning technical and vocational education and training.

The Centre undertakes its activities through a world-wide network of 280 UNEVOC Centres in 165 countries. It creates synergies with UNESCO Headquarters, UNESCO Institutes/Centres and Field Offices; and works in close partnership with other international and national agencies in the field of technical and vocational education and training.

Our Vision

The UNESCO-UNEVOC International Centre acts as part of the United Nations mandate to promote peace, justice, equity, poverty alleviation, and greater social cohesion. The Centre assists Member States develop policies and practices concerning education for the world of work and skills development for employability and citizenship, to achieve:

- access for all
- high quality, relevant and effective programmes
- learning opportunities throughout life.

The Centre contributes to increased opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development, especially for youth, girls, women and the disadvantaged. Its emphasis is on helping meet the needs of developing countries, countries in transition and those in a post-conflict situation.



Our Work

The UNESCO UNEVOC International Centre acts as a key component of UNESCO's international programme on technical and vocational education and training. It also works to support UNESCO's mandate for Education for All and Education for Sustainable Development.

The Centre achieves this through taking action to strengthen and upgrade the world-wide UNEVOC Network (Flagship Programme), with particular reference to:

- Stimulating international and regional cooperation concerning human resource development
- Promoting UNESCO normative instruments and standards
- Promoting best and innovative practices in TVET
- Knowledge sharing
- Mobilizing expertise and resources
- Strengthening partnerships with other relevant agencies



Joint Publications from InWEnt and UNESCO-UNEVOC

- 1) Frank Bünning/Zhi-Qun Zhao (eds.), TVET Teacher Education on the Threshold of Internationalisation, Magdeburg 2006 (available as book or as CD-ROM)
- 2) Jon Lauglo, Research for TVET Policy Development, Magdeburg 2006
- 3) Frank Bünning/Alison Shilela, The Bologna Declaration and Emerging Models of TVET Teacher Training in Germany, Magdeburg 2006
- 4) Frank Bünning, Approaches to Action Learning in Technical and Vocational Education and Training (TVET), Magdeburg 2007
- 5) Alexander Schnarr et al., Vocational Education and Training and the Labour Market - A Comparative Analysis of China and Germany, Magdeburg 2008
- 6) Chana Kasipar, Mac Van Tien et al., Linking Vocational Training with the Enterprises - Asian Perspectives, Magdeburg 2009



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InWEnt – Qualified to Shape the Future

InWEnt – Capacity Building International, Germany, is a non-profit organisation with worldwide operations dedicated to human resource development, advanced training, and dialogue. Our capacity building programmes are directed at experts and executives from politics, administration, the business community, and civil society.

Our Programmes

60 percent of all our programmes are implemented at the request of the Federal Ministry for Economic Cooperation and Development (BMZ). In addition, we conduct programmes for other German federal ministries and international organisations. We are also working in cooperation with the German business sector in public private partnership projects that can be designed to incorporate economic, social, and environmental goals.

The programmes for people from developing, transition and industrialised countries are tailored to meet the specific needs of our partners. We offer practice-oriented advanced education and training, dialogue sessions, and e-Learning courses. After the training programmes, our participants continue their dialogue with each other and with InWEnt via active alumni networks.

By offering exchange programmes and arranging scholarship programmes, InWEnt also provides young people from Germany with the opportunity to gain professional experience abroad.

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InWEnt gGmbH is headquartered in Bonn. In addition, InWEnt maintains fourteen Regional Centres throughout the German Länder, providing convenient points of contact for all regions. Our foreign operations in Beijing, Cairo, Hanoi, Kiev, Lima, Managua, Manila, Moscow, New Delhi, Pretoria, São Paulo, and Dar es Salaam are usually affiliated with other organisations of German Development Cooperation..

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