

Contextualising the Dual Vocational Education and Training System: A Review of Approaches and Challenges

Introduction

Cambodia aspires to reach upper-middle income status by 2030 and high-income status by 2050. One of the strategies to achieve this is transforming and modernising the production base from low-skill labour-intensive to high-skill technology-intensive industry. The realisation of these goals will depend on having a well-educated and well-trained workforce. Studies have shown that, in addition to quality education at all levels, technical and vocational education and training (TVET) is indispensable to upgrade workforce skills and that a skilled workforce helps sustain economic growth even in times of crisis. A large majority of the Cambodian workforce is concentrated in low-skill sectors such as agriculture and garment production and the number and quality of skilled workers produced by TVET providers still fall short of demand. It is therefore imperative that Cambodia strengthens its TVET to ensure the availability of a highly skilled workforce to support industrial transformation.

The dual vocational education and training (VET) model provides paths for students to both learn theoretical knowledge at school and gain practical skills in the workplace. This system has been praised for its ability to produce quality skilled workers, maintain a high level of employment and sustain economic growth in Switzerland, Germany and Austria. It has been adopted widely in both developed and developing countries. The authors argue that learning from this proven model will help Cambodia improve its TVET.

This paper first reviews the literature to give a brief history of dual VET systems, describe the approaches used to transfer the dual VET system from Germany and Switzerland to other countries,

and identify the challenges experienced by recipient countries. It then discusses how Cambodia can extract lessons learned from international experiences to inform TVET policy transfer.

The dual VET system

Definition and basic features

TVET systems around the world can be classified into three basic models:

- the market model in the UK, US and Japan – the state leaves the responsibility for vocational training to enterprises;
- the scholastic model in France – the state plans, organises and controls vocational education;
- the mixed or dual VET model in Germany, Switzerland and Austria – the state defines regulations and the private sector develops training content and provides training places (Greinert 1999 cited in Grollman 2008).

Other TVET systems are just a variation or combination of these three models (Greinert 2004).

This paper deals with the dual VET system, defined as an institutional framework that ensures vocational education and training happens at two learning venues: the company or master providing on-the-job training as a form of apprenticeship, and the part-time vocational school where the apprentice receives theoretical instruction and takes such subjects as sciences, mathematics and social studies (Deissinger 1997). The two learning venues, though operating under different regulatory systems, work collectively to qualify apprentices for state-recognised occupations. There are about 230 such occupations in Switzerland and around 350 in Germany (Sloane 2014). Around two thirds of students in these countries opt for skills training in the dual VET system after completing the nine-year compulsory education rather than pursue a more academic upper secondary education. Dual VET takes 2 to 4 years depending on the

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Table 1: Basic features of the dual VET system

Key features	Description
Learning site and duration	3-4 days/week at the workplace and 1–2 days/week in vocational schools over 2, 3 or 4 years
Qualification strategies in the company	On-the-job training, job rotation, project method, training courses
Emphasis of curricula and teaching	Qualifications of a specific occupation both at the workplace and in vocational school
Allocation of costs	Companies bear the costs of workplace training; the state bears the costs of training at vocational school
Trainers	Supervisors and team leaders authorised as trainers and mentors; vocational teachers in vocational schools
Entry requirements	Full compulsory education (no leaving certificate required)

Source: Adapted from Pilz and Li 2014

occupation. Table 1 shows some basic features of the dual VET system.

A short history of the dual VET system

The term “vocation” has positive connotations in Switzerland and Germany, and vocational education always means the simultaneous development of professional, personal and social competencies. The high status accorded to vocational education in these countries cannot be appreciated without an understanding of its historical roots. In medieval Europe, especially in the 13th and 14th centuries, the town guilds (associations of local merchants or artisans) had great power and influence in the local economy. They regulated the prices of goods and wages and supervised the training of apprentices in their town (Schmidt 1998). Following industrialisation and trade liberalisation in the 19th century, the prestige of the guilds, whose main interest was to provide services to the local community, started to wane (Gessler and Howe 2013). However, the role of the guilds did not disappear entirely in Germany and in 1881 trade regulation was amended to strengthen artisanship (Gessler and Howe 2013). The guilds were given the right to organise apprenticeship. Similarly, in 1884, Switzerland put apprentice training under government control, but the principle of practice-based training by master artisans remained the predominant means of skill training. Only from the 1930s did attendance at vocational school become compulsory for apprentices (SDC 2016). With the approval and support of guilds and later of business

chambers and associations, the apprenticeship system has operated smoothly until today.

The present skill training systems, known as the dual system in Germany and dual VET system in Switzerland, originated in the business sector and, for centuries, were based on the traditional relationship between master artisan and apprentice. It was not until the early 20th century that the state intervened to make attendance at vocational school an essential part of the system. Even today students have to acquire an apprentice contract with an enterprise before they can be admitted to vocational school.

Transferring the dual VET system

Global interest in dual VET

Concern over reducing youth unemployment and issues related to skills gaps and shortages in many countries have led to the question of what type of training should be used to tackle such problems appropriately (Pilz 2017). The good economic performance and low levels of youth unemployment in countries with dual VET systems (Valiente and Scandurra 2017), the increased demand for technical and vocational skills in the labour market (Blossfeld and Stockmann 1998), and the fact that it is practical, relevant and of high quality (Hummelshien and Baur 2014) have provided good arguments for dual VET to be advocated as a global model. Many governments, in developed and developing countries alike, show great interest in adapting dual VET to suit their

national contexts. Since the 1950s, transferring the VET model has been a focus of German development aid policy (Mayer 2001). The German Agency of International Cooperation Services for Sustainable Development (GIZ) has supported VET cooperation in more than 80 countries (Hummelshien and Baur 2014). The Swiss Agency for Development and Cooperation (SDC) has also “expended great efforts in transferring the dual VET system to many developing countries” (Valiente and Scandurra 2017, 44). At the end of 2016, its vocational training portfolio comprised 54 projects in 35 countries worldwide (SDC 2017). Moreover, the dual VET system is also highly praised by multilateral agencies such as the International Labour Organization, the Organisation for Economic Co-operation and Development and the World Bank, calling it the “future-oriented” VET model (Hummelshien and Baur 2014, 280).

Approaches to VET transfer

The dual VET system has been the centre of attention for VET transfer since the 1950s. Hummelsheim and Baur (2014) observe that since the 1970s, VET transfer has undergone three recognisable phases, each using a different approach. In the first phase, from the 1970s to the 1990s, driven by economic self-interest enshrined in human capital theory, the dual VET system (its structures and norms) was transferred without modification to developing countries, aiming to replace the local VET structure in order to make up for skilled labour shortages. In the second phase, from the mid 1990s to 2010, individual components of the dual VET system that were compatible with local socioeconomic conditions rather than whole structures and norms were the object of transfer. And in the third phase, from 2010 to the present, with the growing belief that neither the dual system nor its individual components can be transferred intact, a key aspect approach was used. Based on this approach, “key elements of the system, which together constitute the philosophy or the spirit of the dual VET system, must be adapted to the specific local conditions” (Hummelsheim and Baur 2014, 287).

Recent efforts also focus on reforming local institutions and governance structures to support the gradual implementation of dual VET system

elements in local contexts. Certain conditions are required for successful transfer of the dual VET system.

The engagement of employers in the provision of training, the level of development of the chambers of commerce, the institutional capacity to monitor and evaluate the quality of the training in the workplace, the prestige of vocational studies and ability to reach agreements between social partners are some of the requirements that have been identified for an effective implementation of dual forms of VET. (Valiente and Scandurra 2017, 44)

Challenges of adapting the dual VET system

Although dual VET is seen as a viable and attractive option by both international organisations and recipient countries, efforts to transfer it into different contexts have not been very successful. Very few VET projects worked, leading some researchers to conclude that it is impossible to transfer VET systems from one country to another (Hummelshien and Baur 2014; Mayer 2001; Valiente and Scandurra 2017). For instance, Mayer (2001) observes that the dual VET system is embedded in the historical, societal and cultural context of Germany and is hardly transferable to another country. Gill and Dar (1996, 462) note that although the dual VET model can provide useful lessons, “it is unrealistic to expect that a system that has matured in a highly industrialised country with strong workers’ and employers’ unions and well-developed regulatory and administrative mechanisms to be readily adaptable to countries lacking these attributes”. The literature points to four major challenges facing the transnational transfer of the dual VET system.

Cultural challenges. VET is often stigmatised as a second-class option. Countries with a strong dual VET system place a high value on “vocation”, a life calling that comprises both theoretical and practical pursuits: having an occupation is more important than acquiring higher education. Most Asian countries, however, tend to value higher education over joining the job market at young age. VET is considered a second-chance education for less capable students and therefore

inferior to other higher education (Ratnata, 2013 cited in Hummelsheim and Baur 2014): skills training is only sought when all attempts to enter university fail. Another factor is the difference in training culture. Many countries do not have a strong tradition of private enterprises engaging in skills development; thus initial vocational education has always been the responsibility of the state. Dual VET requires long-term enterprise commitment to training, which is not common in many countries. For example, a longitudinal survey in the US found that apprenticeships for high school graduates lasted less than six months and that few large industries willingly offered such opportunity (Dougherty 1987). Lehmann (2000) identified a similar issue in Canada, where employers' low level of cooperation in the Registered Apprenticeship Program limited the availability of training in terms of occupation options. In the words of Wilson (2000, 1), "Germany's culture of in-firm training may be the most difficult-to-develop attribute of the Dual System in developed and developing nations alike".

Institutional challenges. VET provision requires interinstitutional collaboration and coordination, elements that are often lacking in developing countries. In Germany, Switzerland and Austria, the roles and responsibilities of the partners involved in the training are clearly defined. The federal government is responsible for the strategic management and development of VET, the state government implements and supervises VET, and enterprises and their associations develop training contents and provide apprenticeship places. This broad partnership is grounded in a highly organised private sector. The private enterprises are organised into chambers or professional associations, each representing a particular branch of the economy (e.g. Chamber of Industry and Commerce, Chamber of Crafts, Chamber of Agriculture). The state sets guidelines and delegates regulatory competence to these self-governing bodies, which play a crucial role in organising, administering and evaluating VET in their area of responsibility (Sloane 2014). In developing countries, where informal economic activities are dominant, business associations are not well organised and industrial relations between employers, trade unions and government counterparts are not well institutionalised. The

prevailing institutional environment is therefore not readily conducive to VET.

Technical challenges. Lack of experience in training and knowledge of pedagogy prevents enterprises in developing countries from actively participating in VET. VET requires both technical knowledge of a particular trade and pedagogical skills to transfer that knowledge to others. Professional associations in countries with dual VET are often led by master artisans who have solid experience in their field and in training and mentoring junior colleagues. They have a high level of technical knowledge and skills and are able to engage in pedagogy, from designing training courses to monitoring and evaluating learner progress.

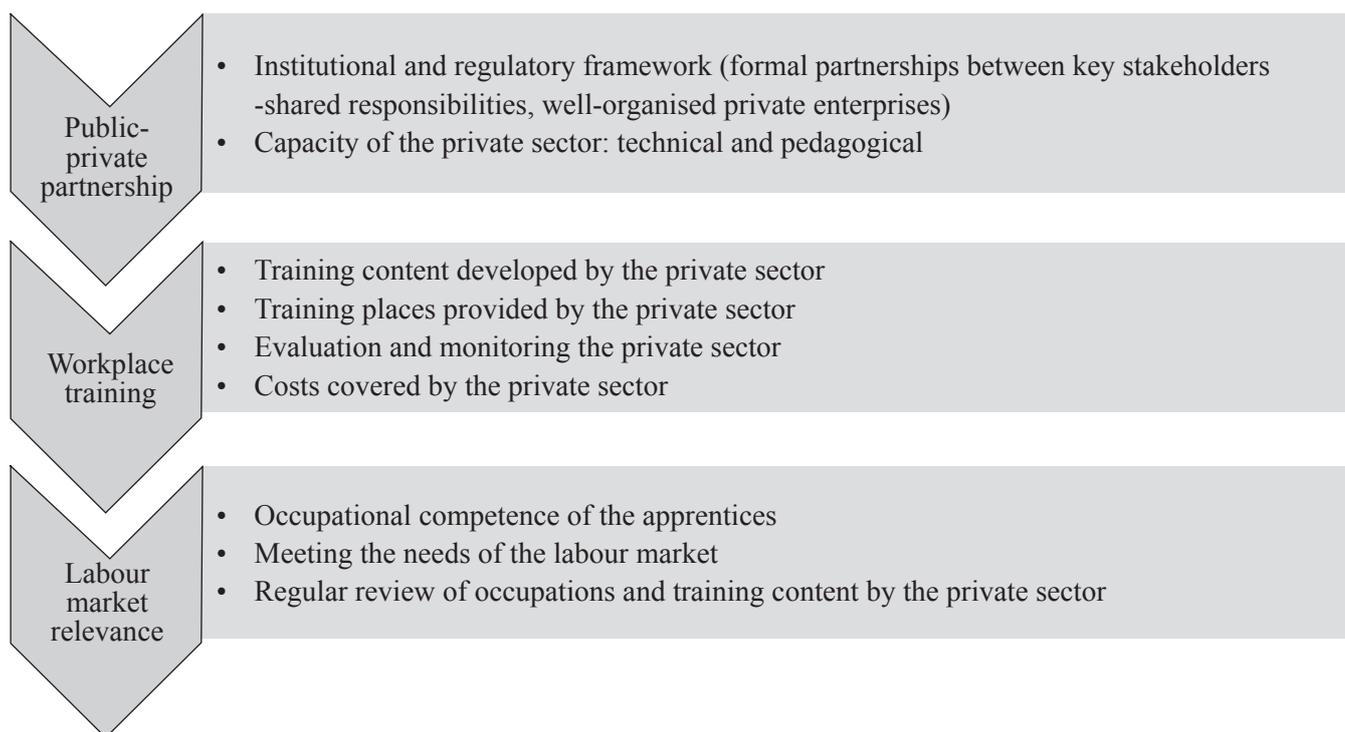
Infrastructural challenges. Lack of physical resources that are of industry standard limits the adoption and delivery of quality VET, particularly in developing countries. A nationally representative survey of about 500 enterprises in 2009 in Malaysia found that lack of facilities and qualified instructors were the main reasons for their unwillingness to adopt dual VET (Md Deros, Zohdi and Mohamad 2012). Similar challenges of insufficient equipment and facilities were also reported in case studies of dual VET transfer and training reform in China and India (Wilson 2000; Zhiquan and Han 2009).

Conclusion and implications for Cambodia

This paper has highlighted three overarching principles of dual VET: enterprises' engagement, workplace training, and labour market orientation (Figure 1). The main purpose of the dual VET system is to provide young people with quality and relevant occupational skills – the skills that meet labour market needs, boost workforce productivity and secure national competitiveness.

The principal means used by Switzerland and Germany to achieve this labour market relevance is by training their workforce in real work environments, where students spend the majority of their time as apprentices. Employers and their associations are actively involved in the training. They develop training content, provide training venues and fund in-enterprise training costs, while working closely with vocational schools, the public sector and other social partners. The partnerships between these stakeholders are

Figure 1: Key principles of the dual VET system



Source: Authors' synthesis

well defined and governed by a clear regulatory framework.

In countries where education and training have always been a responsibility of the state and regulatory framework for public-private partnerships (PPPs) does not exist, encouraging private sector engagement in the development and delivery of skills training is perhaps one of the biggest challenges. As a result, those countries have adopted a school-based strategy where students engage in job-related learning such as through laboratory work and workshops at school and internship programs (from 2 weeks to 6 months) at enterprises. As such, the government plays a leading role and invests a lot to ensure work-related practices and build strong partnerships between TVET schools and business and industry, as in China, Singapore and South Korea.

Although contextual differences make it impossible to transfer the dual VET system, either in its entirety or component by component, it can serve as a useful model. Cambodia can look into the three key principles of the dual VET system and consider integrating them into current practices of vocational training. Partial solutions geared to the country's specific conditions and priorities have been advocated as the most promising means for

dual VET transfer. Cambodia's sustained strong economic growth and persistent skills shortage serve as important motives for employers to engage in TVET. However, adopting the three principles will require collective and solid effort. To address the four main challenges identified, the following recommendations are proposed:

- **Overcome the stigma in TVET and improve its attractiveness by:**
 - *Elevating the status of TVET qualifications:* To change perceptions and attitudes towards vocational education, TVET needs branding. The government must promote TVET to young students, raise awareness of TVET opportunities and enhance its attractiveness among students, their families and the general public. TVET branding must go beyond monetary returns to develop a return-on-experience mindset, including commitment to a profession, self-fulfilment from a satisfying and rewarding career, and contributing to society.
 - *Incentivising vocational education:* Students who finish the nine-year basic education would find a vocational career path more attractive if they could choose qualification and training

tracks in the areas that are of high demand in the labour market and if they were provided scholarship assistance.

- *Making a good business case for enterprise-based training*: Private enterprises will always balance the costs and benefits of training. To ensure the private sector views training as an investment, workplace training programs must last long enough for firms to gain from trainees' productivity. In occupational categories where productivity effects of training are not realised until after the training period, government subsidies should be provided to offset the firm's training costs.
- **Create the conditions for successful interinstitutional collaboration and coordination by:**
 - *Developing a sound PPP framework for TVET*: The main stakeholders of Cambodia's TVET system are government ministries, enterprises, TVET providers, and NGOs and development partners dedicated to improving education. A multi-stakeholder partnership framework needs to be developed and each stakeholder's roles and responsibilities in operating, managing and funding TVET must be clearly mapped out.
 - *Organising the private sector*: SMEs in Cambodia are in the early stages of development and either lack capacity or are not yet interested in training. Existing employers' associations, created mainly for interest representation and lobbying, lack technical and training capabilities. It is now essential that SMEs be organised into associations based on economic sector. Importantly, such associations must be technically competent in

their field and in labour force training.

- *Strengthening regulatory framework to encourage private sector engagement*: An important motivation for enterprises to participate in training is the possibility to select and recruit learners. But the high probability of talent poaching and job hopping in Cambodia discourages firms from investing in TVET. This necessitates the formulation of law and policy to prevent employee poaching and to secure training costs against employees who leave.
- **Integrate pedagogical knowledge and industry expertise by:**
 - *Forging links between TVET providers and enterprises*: To bridge the gap between technical and pedagogical skills in schools and industry experience and expertise, expertise exchange must be promoted so that vocational school teachers can benefit from periodic refresher training from industry experts and industry trainers can have access to pedagogical knowledge.
- **Develop industry-standard training facilities and equipment by:**
 - *Encouraging enterprises to invest in training resources*: Firms should be provided full exemption or tax relief for certain supplies, materials and equipment that are used for training.
 - *Pooling training resources*: Business associations should work together to give all students and trainees the opportunity to access vocational training.

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