
The German Dual VET System and Approaches to enhance Employer Engagement

Abstract

VET plays a vital role in equipping the youth of a country with skills for employability, which employers profit from in terms of a skilled workforce, a key for productivity. A well-functioning VET system is a prerequisite; one example is the German dual VET system. In this article, major stakeholders, institutions and legal frameworks that contribute towards the success of dual VET are described. Moreover, the basic aspects of the two learning venues - training at the company and the vocational school - as well as the different motivations to engage in VET are outlined, considering the perspectives of the industry, government and apprentice.

In order to facilitate the competence development of the apprentices, a second learning venue in an authentic work environment at the company is needed besides the vocational education and training at the vocational schools. However, industry involvement often poses a major problem. Research projects that focus on the needs of the industry in the dual VET system and other approaches to enhance employer engagement based on related resulting benefits for the industry will be discussed

Keywords: *Dual system, Vocational Education and Training, Germany, employer engagement, industry involvement, two learning venues*

1 Introduction

Equipping the workforce, especially the youths of a country, with skills for employment is a vital precondition for social participation and economic development. Vocational Education and Training (VET) therefore plays a major part in preparing current and future employees to meet the demand of the industry and corresponding labor market to enhance sustainable development of the local economy. In many developing countries unemployment rates are high, particularly among young adults. This poses major problems, which societies and economies are currently facing. Comparing the global unemployment rates of adults (4.3 %) to youth (13 %) (ILO 2018, 2) one can see that young people are three times more likely to be unsuccessful when seeking employment (UNESCO 2015). “The lack of opportunities that this generation is faced with poses a threat to social peace and constitutes an obstacle to economically, socially and environmentally sustainable development in the countries and regions concerned” (BMZ 2017, 9). People who have completed vocational training are more likely to find decent jobs and afford living expenses (BMZ 2017, 5). Therefore, a well-functioning VET system is expanding employment size and “contributes towards the quality of living and societal development” (Paryono, Spöttl, Schröder, & Goh 2017).

The impact of globalization has benefitted some regions more than other; especially in dynamically growing regions such as Southeast Asia, the challenge of implementing a responsive and labor market-oriented VET system is evident. East and Southeast Asia's economies and nations' wealth have increased over the past decades and have been robust in 2018 despite national and international "headwinds" (OECD 2018, 1). To adapt to the challenges, partly caused by rapid development including structural changes in economies, a highly skilled workforce is required – a VET system which satisfies the needs of employers as well as employees is therefore a prerequisite (Schröder, Paryone, Chang, & Xiao 2013). Along with this, it is essential to define VET as an educational sector in its own rights besides general education and higher education and enhance its attractiveness. Most countries in the ASEAN region have recognized the importance of VET graduates with skills for employability and have acknowledged that this can primarily be achieved by relevant (and industry based) training (OECD 2016, 10). However, often the industry is not majorly involved and does not have representatives in VET. Without close cooperation between the industry and VET schools/institutions, it becomes difficult to meet the needs of the labor market (ibid.). Moreover, the competencies and skills for employability, which are required, cannot solely be learned at school. Consequently, a second learning venue is needed that allows students to work on realistic, day-to-day tasks and challenges to learn in an authentic work environment. Only this work-based learning, including technical know-how and adaptability, will allow students to be prepared for the real work tasks ahead of them when starting a new job, therefore improving their quality of employment. It enhances productivity, promotes innovation and entrepreneurship, while at the same time reducing poverty in the region (Pavlova 2014, 1).

For a number of reasons, VET has become of major interest to various countries in Southeast Asia and around the world, partly because of its impact on the sustainable economic development of a country. VET partnered with different stakeholders like the government, schools and industry can respond to both the demand of the labor market as well as the needs of the industry. Yet, VET is often considered a second choice. Consequently, higher or tertiary education is believed to more desirable, receiving higher acceptance among the community. Mustapha (2018) points out that "few countries have attracted a majority of their students to join a vocational track as their first choice". One of those examples is Germany where about 50 % of each cohort enters the dual VET system. "TVET "made in Germany" has become a brand name that enjoys international recognition. A low youth unemployment rate, high employment rates and a stable economy in Germany are evidence of the fact that investing in TVET pays off" (BMZ 2017, 9). As a matter of fact, unemployment rate among youth is at only 6.5 % in Germany whereas the average in EU-countries lies by 18.6 % (BMBF 2017a, 4).

Therefore, the following article will look at the German dual VET system including its major stakeholders and components, shedding light on the motivation of different stakeholders involved that contribute towards the success of the dual VET system. Moreover, strategies to

enhance employer engagement within the VET system will be discussed to increase the global engagement of the industry.

2 German Dual VET system

2.1 Basic aspects of the German Dual VET System

In order to give an overview of the German dual VET system, the main framework, stakeholders and laws will be explained in further detail below. It should be noted at this point, that Germany is not the only example - Switzerland and Austria have a similar but not identical dual system, which all share the same feature in terms of their long history and great acceptance within the society including the industry (BMW 2017, 1). The origins of the German Dual VET system lie in the last third of the 19th century, nonetheless, the term “Dual System” wasn’t used until the 1960s, where it received its legal framework through the German Vocational Training Act (BBiG) in 1969 (Spöttl 2016, 37). (*An English translation of the current BBiG (2005) can be downloaded from German Federal Ministry for Education and Research (BMBF 2015).*) “The Vocational training Act (BBiG) is the Federal Government’s legal framework for all provisions governing initial and continuing vocational training” (BMBF 2013, 24). According to the BBiG vocational education is implemented in two different learning venues as the name “dual system” already states. All participating stakeholders (federal government, *Länder* (federal states), industry) have to act in line with the federal laws recorded in the BBiG (BMBF 2017b, 9). It therefore ensures a national regulation of organizing the dual VET system; however, it does not refer to the laws of vocational schools in particular since those are the responsibility of each state.

Ever since the lessons of the Second World War and the establishment of the German constitution in 1949, educational and cultural legislation and administration are mostly controlled by the federal states. Nonetheless, there are common framework curricula for vocational schools as well, which are issued by the standing conference of the ministers of education and cultural affairs (Kultusministerkonferenz - KMK) and serve as a guideline for vocational school curricula in the 16 different states. According to the BBiG, the company is responsible for organizing, implementing and monitoring company-based education and training and for legal supervision which encompasses the final examination. Additionally, the final exams are also in the hands of the federal government usually in form of Chamber of Industry and Commerce (IHK) or chamber of handicrafts (HWK). Hence, the training takes place at the company as well as a vocational school, which is a major difference to other VET systems that are often school based. Spöttl (2016) refers in this case to a “double dual system” with regard to the two different learning venues as well as the duality concerning the different responsibilities, governance and implied powers. The company is responsible for the whole training as well as the practical part of the apprenticeship, whereas the vocational school is in charge of the theoretical education (ibid.). Therefore, the dual VET system has two legal frameworks and financing mechanisms and also differs in teaching personnel—the trainer at the company as well as the vocational teacher at the vocational school.

To enter the dual system, the trainee needs to have finished compulsory education; besides that there are no other formal prerequisites that need to be fulfilled. The largest group of trainees is between the age of 16 and 18. The prime aim of the vocational school is to “enable the acquisition of *vocational action competence*, which includes professional and personal competence. This manifests itself in the willingness and ability of the individual to be considerate and act reasoned in professional, social and private situations as well as to act individually and socially responsible” (Kultusministerkonferenz 2015, 2). This so-called vocational action competence includes three areas of competence according to the standing conference of the ministers of education and cultural affairs in the Federal Republic of Germany (2007, 11):

- Professional competence and know-how: willingness and ability to solve tasks and problems goal-oriented, appropriate and autonomous.
- Social competence: willingness and ability to live and shape social relationships, to apprehend and appreciate gratuities and tensions as well as to deal rationally and responsibly with others and to communicate. This includes, in particular, the development of social responsibility and solidarity.
- Self-competence: willingness and ability to reflect on development opportunities but also requirements and restrictions in terms of family, work and public life, to develop one’s own talents and life plans. It includes features such as independence, critical ability, self-confidence, reliability, responsibility and sense of duty.

It becomes obvious that technical know-how is not sufficient on its own. Instead both learning venues are set up to help trainees develop vocational action competence; while the vocational school sets the focus on learning including relevant theory, the training company emphasizes practical application (Schröder, Schulte, & Spöttl 2013, 2). In order to achieve this goal, different stakeholders are involved to shape the key elements of the dual VET system, including the continuing development of system standards and implementation, assessment and certification and the two responsible learning venues (GOVET 2016). An overview of the basic aspects of the training at the company and the vocational school is depicted in table 1.

Table 1: Basic aspects of the training at the company and the vocational school characteristics of the German dual VET system (Spöttl 2016, 39; Hummelsheim & Baur 2014, 282)

Criterion	Characteristic	
Learning venue	Company	Vocational school
Legal status	Apprentice	Student
Responsibility	Employers with federal and union monitoring	Ministries of education and culture in the 16 federal states

Monitoring overseers	Chambers (IHK, HwK)	Sovereignty of the federal states
Legal status	Under private law	Governed by public law
Financing	Companies are responsible for funding: staff salaries, training materials, and pay for apprentices	Paid by the 16 federal states: staff salaries, training materials
Authority over curricula	Federal state/government (training regulations)	Federal state/government (framework curriculum of each state)
Curricula	Training regulations: training is directive, vocational-specific, related to the job, work-based-learning	Framework curriculum: 1/3 general education and 2/3 vocational training, job-related theory, activity-based approach
Organization at the learning venue	Productive work, instruction at work, apprenticeship at a training workshop	Vocational subjects, studying in special VET classrooms
Thematic priority	Oriented on occupational field and occupation	Oriented on occupational field and occupation
Legal Framework	BBiG, HwO, Federal training laws, industrial rules and regulations	Specific school laws in the 16 federal states
Duration	3-4 days/week	1-2 days/week
Total training period	Usually 3 years, sometimes 2 or 3.5 years	Usually 3 years, sometimes 2 or 3.5 years
Teacher qualification	Must qualify as master craftsman or pass trainer aptitude test; no university degree needed	Two-phase qualification: university degree (Bachelor's and Master's degree) followed by 1.5 year practical training in vocational schools
Contract	Private legal contract between enterprise and apprentice	No contract – but obligated to visit vocational school
Guiding principle	vocational action competence	vocational action competence

Not only general but also vocational education is the responsibility of the federal states; as a consequence, the framework curricula for the vocational schools are individually designed by the KMK (the standing conference of the ministers of education and cultural affairs) for each occupation and are aligned with training regulations; the 16 federal states then individually adopt, adapt or slightly alter the framework curricula before implementing them. Those include two thirds of vocational subjects, which contain job-related theory and follow an

action and employment oriented approach and one third of general subjects. At this learning venue students spend 1-2 days a week.

German VET puts a strong emphasis on learning by doing, which is reflected by the fact that trainees spend about 70 % of their apprenticeship (3-4 days a week) at the workplace (in the company), starting from day one of the apprenticeship. The in-company training is the responsibility of the employers, with federal and union monitoring, and is based on in-company training standards, which are drawn from training regulations (GOVET 2019). Those include the occupational title, a description of the occupation, defined minimum requirements in terms of occupational competence, the duration of the training, the overall training plan and the examination requirements (BMBF 2013). The training is vocational specific and based on work-based learning that is related to the specific occupation. This kind of binding training regulation ensures that the training is implemented at the same or at least comparable level throughout the country. Moreover, it serves as a guideline to employers and employees in terms of what can be expected (BMBF 2017b, 2). Occupations and related training regulations are continuously updated and if needed, new occupations are created – those processes are usually initiated by the employers (BMW 2017). According to the Vocational Training Act “training in a recognized training occupation may only be provided on the basis of the training regulations” (BBiG section 2, paragraph 2).

Consequently, the costs of the dual training are shouldered by both learning venues. The company pays for arising expenses in terms of trainer salaries, training materials and apprenticeships. The apprentice receives his allowance monthly, which comes out to be about one third (increasing annually) of the salary for a trained worker at the beginning of his career (Hummelsheim & Baur 2014, 283). The vocational schools are financed by the states, which covers the costs for school facilities, teacher salaries and training materials.

Two parties, a company and an apprentice, are required to establish the training contract, which forms the basis for the in-company training. Hereby the company obliges to teach the minimum standards described in the training regulation. Moreover, the duration of training - usually 3 years, sometimes 2 or 3.5 years - probation time, training allowance and vacation are regulated through this document as well. Yet, the training contract only becomes legally binding after being registered by chamber organizations (BMBF 2017b, 2). The mid-term and final examinations within the dual system are organized by the chambers and include a theory exam as well as a practical exam. The Vocational Training Act (BBiG/HwO), the training regulations and the examination requirements form the legal basis for the final examination to prove that the apprentice has the knowledge and vocational action competence to meet the nationwide requirements for this occupation (Schwanz 2015, 62-63). “The examination board is composed of representatives of employers, employees and a vocational schoolteacher (government)” (GOVET 2019, 12). If the trainee should fail his final examination, the contract is extended until the next possible examination date or a maximum of one additional year (BMBF 2017b, 2).

2.2 Motivation to engage and uphold dual VET (industry, government, workers)

The close but complex cooperation between the different German stakeholders in VET only works because the industry, the apprentices as well as the government all profit from the system and are therefore interested in not only upholding dual VET but also in continuously strengthening and further developing vocational education and training. Looking at well-established and efficient dual VET system from the *perspective of the industry*, dual VET ensures “the flow” of skilled labor that meets the minimum standards of the occupation, which is a precondition for the productivity and for remaining competitive (BMBF 2013, 21; GOVET 2016, 4). It therefore also reduces the costs of retraining and “settling in” newly hired workers who completed dual VET at a different company since standards are applied nationwide. Companies provide highly qualitative vocational education and training, which includes solving actual daily work tasks because the apprentices will more likely be able to solve those tasks independently and successfully after having completed his/her dual VET - they will be a qualified and valuable worker from day one. A precondition for this is the main element of dual VET: two learning venues from day one. Moreover, during training the company has the advantage of getting to know the apprentice and his competences in order to decide whether or not to hire him after passing his final exam. Job related training often increases motivation and strengthens the loyalty to the company. Furthermore, many companies take on the social responsibility of offering training as well as fair pay.

About 40 % of the population in Germany graduate from dual VET which is often associated with a high employment security since 95 % of its graduates are employed (GOVET 2019, 2). From the *perspective of the government* concerning dual VET (including the national government/federal ministries and regional government referring to the 16 federal states), it enhances employment, which “is a collective good for the economy and the society” (GOVET 2016, 6). Moreover, “for national and economic growth and development, highly skilled workers are needed” (GOVET 2019, 9). For this reason, dual VET is part of the nationwide education system, which includes the government financing school-based education and the provision of a framework for the participation and responsibilities (GOVET 2016, 8). According to the German constitution (Grundgesetz: Artikel 12) every citizen has the right and thereby a free choice to practice an occupation; thus, meeting the requirements and standards of the occupation is mandatory.

Since the *apprentice* already earns money during his training in dual VET, it enhances the attractiveness compared to entering other programs in VET (like full-time school-based training) or tertiary education. Being involved in daily work tasks and problems in dual VET also offers the apprentice the possibility to get a picture of and acquainted with the requirements and gratifications of the specific occupation. This includes the right of early termination and application at another company and occupation. Furthermore, the possibility to study and work in a skilled occupation and the high level of employment security enhance the possibility of a steady and decent income of future workers (GOVET 2016, 4). The recognition of a skilled occupation nationwide opens up the possibility to work in the occupation in every state and thus increases the mobility of citizens.

2.3 German VET institutions and main responsibilities

Besides the already mentioned institutions and regulations involved, there are others that have vital functions within the VET system, collaborate with other areas of society and contribute to the success of the dual VET. These are shown in table 2.

Table 2: **German institutions of vocational education (Schanz 2015, 29-30)**

The Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung - BMBF)	BMBF carries out fundamental tasks in education and research, has a coordinating role and legislative tasks, e.g. in the fields of vocational education training, further education and educational support.
Federal Ministry of Economics and Labour (Bundesministerium für Wirtschaft und Arbeit – BMWA)	BMWA is the most important regulator in terms of developing and modifying training regulations and training occupations.
Federal Institute for Vocational Education and Training (Bundesinstitut für Berufsbildung – BIBB)	BIBB is primarily concerned with the research and further development of vocational training and further education.
Institute for Employment Research of the federal employment agency (Institut für Arbeitsmarkt- und Berufsforschung der Bundesagentur für Arbeit - IAB)	IAB's fields of activity include empirical, theoretical and methodological basic research in the fields of training development and labor market development.
German Chamber of Commerce and Industry (Deutsche Industrie- und Handelskammer – DIHK)	The DIHK is the top organization of 82 chambers of commerce and industry (IHK). The IHKs represent the interests of their associated companies vis-à-vis the regional municipalities and state bodies. In the context of vocational education and training, they have extensive tasks as the responsible body under the BBiG, e.g. conducting examinations. The DIHK represents the interests of companies vis-à-vis the Federal Government.
Association of German Chambers of Skilled Crafts (Deutscher Handwerkskammertag – DHKT)	The Association of German Chambers of Skilled Crafts is the umbrella organization of the 53 chambers of skilled crafts in Germany and represents common affairs of the chambers of skilled crafts.
Coordinating association of German industry for vocational education (Kuratorium der Deutschen Wirtschaft für Berufsbildung)	The Coordinating association of German industry for vocational education is a coordinating institution of the economy for vocational education and training and has

	eight leading associations as members.
Federation of German Trade Unions (Deutscher Gewerkschaftsbund)	In addition to the Federation of German Trade Unions, the individual trade unions are also interested in vocational training issues and try to influence vocational training policy. In this context, the German Association of Teachers at Vocational Schools (BLBS) is also relevant.
Institute of the German Economy in Cologne (Institut der deutschen Wirtschaft Köln)	The main department "Education and Labor Market" deals with questions of the development of the education and training system as well as the relations between education and employment system within the framework of expert opinions, publications and events.

The different institutions and stakeholders altogether are contributing to the implementation of dual VET. They closely cooperate in continuously developing the national VET system, including national standards. High involvement is needed from all parties to implement dual VET comprising the assessment and certification of the currently 327 different occupations (GOVET 2016, 11). Legislative power of the in-company training in dual VET lies with the federal government. This includes the structure and training content of nationally accepted occupational titles, which also take the “basic principles agreed with industry and the states into account” (Hippach-Schneider & Huismann 2016, 14). The government furthermore supports and innovates dual VET by different measures, such as the Federal Education and Training assistance Act (Bundesausbildungsförderungsgesetz, BAföG) and providing funding for research projects (ibid.). The Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung, BMBF) is responsible for policy issues in VET e.g. vocational career orientation and the Vocational Training Act (BBiG), “the annual report, the implementation of programs to improve VET and the legal supervision and funding of the Federal Institute for Vocational Education and Training (BIBB)” (Hippach-Schneider & Huismann 2016, 14f.). Besides being primarily concerned with the research and further development of vocational training and further education, the BIBB has other responsibilities, like publishing an annual research program and drafting initial training regulations, which are defined in section 90 of the Vocational Training Act (BBiG).

The ministers of the 16 states participate in the KMK (standing conference of the ministers of education and cultural affairs of the federal states), which releases recommendations that only become legally binding when each individual state reissues their curricula for vocational schools, aligned with in-company training standards. (This is due to the sovereignty of the states explained in 2.2.) Hence, the state government bears full responsibility for vocational schools, including financing the teaching staff. Furthermore, each state has a vocational training committee made up of employer representatives, employees and state authorities who

act as advisors to the government in terms of vocational training issues in schools (Hippach-Schneider & Huismann 2016, 15). Besides the federal government and the federal states, the social partners also play a crucial role in terms of employer and employee representatives. The social partners are involved in modernizing training occupations as well as in creating new ones. “Organizing apprenticeship/dual training requires a complex but clear division of responsibilities. Employers and unions play a central role in initiatives for change because the structure of vocational training must meet the demands of the industry. If there is a need for change – e.g. in qualification requirements – representatives of the federal government, state governments, industry and trade unions agree on the basic principles for this such. Work on the training regulations and framework curricula is ongoing and continuously coordinated among individual partners” (Hippach-Schneider & Huismann, 15). As self-governing bodies, the chambers of industry and commerce set up a VET committee and examination board, give advice to the industry and trainees, monitor in-company training, evaluate the ability of the trainer of the in-company training, and conduct the organization of final examinations in dual VET. The “competent bodies monitor and promote Dual VET implementation in their region and thus ensure quality of VET” (GOVET 2016, 16).

2.4 Is a Transfer of the Dual VET System possible?

Evidently, implementing and continuously developing VET to ensure a high qualitative VET system is a task jointly shared by the different stakeholders that each profit from it in one way or another. The complex system has developed over time and suits the basic needs of German society; however, it cannot be simply transferred and implemented in other countries. Key elements, however, can serve as ideas or as one approach of designing a high quality VET system, which then needs to be adapted to the specific national circumstances and conditions, learning culture, and traditions, which are the starting point for each development or enhancement of a dual VET system (Dehnbostel & Lindemann 2016, 125). The following six core principles can be used as a basis for international discussion when comparing different dual VET systems. The additional ten cornerstones of Dual VET systems support the principles and provide further guidelines on factors of success of German dual system.

Six core principles of Dual VET system (Dehnbostel & Lindemann 2016, 126f.)

- Cooperation between government, industry and social partners
- Learning in the process of work
- Permeability and equivalence
- Socially accepted national educational standards
- Qualified vocational training personnel
- Vocational training and labor market research

Ten cornerstones of a dual vocational training system (ibid.)

- National and sectoral qualification frameworks
- Educational management and controlling

- In-company educational work
- Competence orientation and vocational action competence
- Learning venues, forms of learning organization and learning concepts
- Counselling and support
- Competence assessment and validation
- Resource efficiency and sustainability
- Quality assurance and development
- Community funding'

In many countries it is not (yet) a common practice in VET to combine in-school education and training at a company (BMBF 2017a, 6). Instead many focus merely on providing VET at vocational schools in an often theoretical setting, working on fictional tasks that are not in line with real work tasks done on a routine basis. This creates problems when trainees are transitioning to a company after finishing their education since they often lack practical skills and knowledge that is needed in order to fulfil job requirements (BMBF 2017a, 6). Combining the two learning venues in VET has the advantage of making the transition to work easier, and the employee will be valuable to the company from day one (ibid.). This will improve the attractiveness of VET in general and enhance employer engagement since the VET-system can be responsive and adapts to the needs of the industry.

The German Dual VET system is widely recognized as a qualitative and labor market-oriented VET system, which many other countries want to establish or implement in a similar manner. However, as Hummelsheim & Baur (2014) point out, the dual system cannot be simply copied and transferred to a different country. This is partly due to differences in each country in terms of cultural, social and technological backgrounds (Arnold, Gonon, & Müller 2016, 130). Hummelsheim & Baur refer to three different phases of the idea of how to transfer the dual system into foreign countries: the first starting in the 1970s until the 1990s, where the key approach consisted of the optimistic assumption that the German dual system was superior to any other and could simply be transferred; the second lasting until about 2010 enclosed transferring individual components while paying more attention to the social and economic conditions. In the third and current phase, “one key idea is gaining ground, that neither the system as a whole nor its components can be transferred. Instead, key elements of the system, which together constitutes the philosophy or spirit of the dual system, must be adopted to the specific conditions of the countries taking on the system” (Hummelsheim & Baur 2017, 287).

3 Employer Engagement in Dual VET

3.1 Attractiveness of Vocational Education and Training

Many foreign VET professionals value the German approach to VET. Still, VET does not enjoy such a prestigious status in all levels of society in other countries. Especially among the public, general academic education is favored over applying for vocational education, and “is

seen as a second best option, an option for lower achievers” (Ruth & Grollmann 2009, 47). One of the reasons being that many VET graduates are not prepared to fulfill the tasks of the occupation within the real world of work (Ratnata 2013, 1). In order to change this negative point of view the VET system needs to be further developed to be able to meet the needs of employers, the employees and the government. This can only be achieved when all stakeholders share a common goal and participate in shaping future VET by jointly cooperating, benefitting and fulfilling their responsibilities, which should be regulated in a national vocational act or law.

In Germany, a little more than 50 % of the companies fulfil the requirements to offer dual VET and about half of those actively engage (IAB 2018, 2f.). Looking at the large enterprises comprising of 500 employees and more, almost all participate, whereas small enterprises are less likely to partake (only four out of ten) (ibid. IAB 2018, 3). This is partly due to the long-standing history of VET; furthermore, engagement in Dual VET is part of the companies’ social responsibility and therefore increases their reputation (EPF 2017, 8). Wenzelmann (2012, 127) differentiates between two general training motives for employers: the productivity-motive mandates that the arising costs during the apprenticeship need to be paid off (in terms of productivity of the apprentice) by the end of the training. Often those companies have limited interest in hiring after final examination, especially if the costs of an apprentice were lower than those of an unskilled worker. Enterprises with an investment-motive aim at meeting the need of skilled workers, therefore they regard the money spent during the apprenticeship as an investment in the future, which will pay off after finishing dual VET (ibid.).

Unfortunately, in many countries that try to strengthen their VET, enhancing the involvement of the private sector still poses a major problem. Therefore, different approaches and ideas on how to enhance the participation of the employers will be discussed, which includes the improvement of the perception and attractiveness of VET.

One might say that the attractiveness of a VET system can be measured by the number of students enrolling compared to other general educational programs; however, this would limit the perspective of a more complex matter. The attractiveness of VET according to Ruth & Grollmann (2009, 47) can furthermore be defined as “a) the relative standing in the labour market (both employers’ perception and the relative labour position of VET graduates in terms of employment chances and earnings); b) the responsiveness or better the ‘flexibility’ of VET”. The last point is differentiated further (cf. ibid.)

- “*Organisational flexibility*: the extent to which TVET participants can switch from VET pathways provided by one particular institution to VET pathways provided by other institutions (inter-organisational flexibility) or the extent to which VET participants can switch between pathways within one institution and/or can follow more individual pathways in terms of enrolment, outflow and curricular options (intra-organisational flexibility). In the latter case particular organizational pre-conditions are such as timetables, resources, locations, etc. play a role.

- *Pedagogical flexibility*: this concerns the ways of teaching and learning applied and the instructional and guidance activities of teachers and trainers, the learning activities of teachers and trainers and the learning activities of the learners themselves.
- *Curricular flexibility*: this involves flexibility with reference to a number of dimensions: a) flexibility over time, e.g. updating the curriculum due to changes in competencies demanded by occupational practice; b) across space, e.g. adjustments to regional conditions; c) across individuals, e.g. meeting the particular needs of individual students (comparable to input flexibility).”

They conclude that flexibility can enhance the attractiveness of VET in terms of the perspective of VET students as well as employers engaging in VET (ibid. Ruth & Grollmann 2009, 48).

3.2 Approaches to Engage Employers

The main reason why employers engage in VET is because it benefits them. After hiring the apprentice once dual VET is completed, in terms of improved productivity and therefore financial return, there are other advantages “such as increased flexibility among employees, reduced overhead costs (due to efficiencies) and a greater ability to innovate” (Stanwick 2009, 15). Yet, it is often difficult to find participating enterprises especially in countries where VET is not yet nationally implemented or seen as attractive and valuable education.

In order to analyze perceived problems and deficits within a VET system Vocational Education and Training research is essential, since it is the only way to identify national circumstances and find individual solutions matching the needs of involved stakeholders. The subject matter in VET research includes main national structures and processes, which can be differentiated on different levels:

- on the macro level: political (national and federal state level) and administrative (e.g. chambers or school authorities) structures and processes;
- on the meso level: organizational structures and processes relating to the two learning venues VET schools and in-company training;
- on the micro level: didactical structures and processes involving the classroom and the work/training place at the company (Sloane 2018, 3)

Therefore, it is important to **establish VET as an academic discipline by strengthening a scientific VET community** that is able to undertake research activities to reveal problems and issues that VET institutions, industry, VET personnel and students are currently facing to improve national and regional VET systems that meet the needs of all stakeholders on different levels. When trying to increase employer engagement, it becomes especially relevant to **design research projects to identify and evaluate the requirements of the company**. Hence, conducting research activities in different sectorial areas and different sizes of companies can help to outline the specific demands or current issues of the companies such as skill gaps and mismatches with regard to upholding or establishing a skilled workforce for

quality production. Since the participation and engagement in dual VET is generally voluntary for companies, their perspectives need to be considered in order to design a dual VET program they will profit from. Therefore, research projects could start by analyzing the work-tasks that a VET graduate must be able to perform and deriving occupational specific vocational action competences from them. Another option would be interviews in plants and factories based on a problem-based approach to develop individual implications and solutions. Addressing those needs by showing that VET can be a possible starting point in terms of skills shortage, skilled workforce and industrial growths makes it more attractive to engage in VET.

Especially “facilitating links between employers and the VET system is [...] important in assisting employers to navigate through the complexity of the system and in providing appropriate training” (Stanwick 2009, 19). A **framework for dual VET** forms the bases for such a cooperation of different stakeholders. This includes regulations and shared responsibilities so a coherent and consistent strategy can be followed by all participating actors. It also comprises **national competency standards** for each occupation to guarantee a minimum level of vocational action competence and therefore increases the quality of VET. Specific sectoral competency standard committees need to analyze the skill demand of the companies and define and implement national standards in cooperation with the different stakeholders involved. It is crucial that the industry is involved in the process of drafting curricula and including standards, since employers “will not accept the ‘standard’ programme a provider delivers unless it meets their needs” (LSIS 2011,1). According to a study by Smith et al. (2005) in Australia examining the benefits of companies participating in VET, enterprises perceive **nationally recognized trainings** as a structured approach that facilitates quality standards - from this they concluded that nationally recognized training should be endorsed. They point out further that governmental funding is crucial when trying to implement nationally recognized training; however, companies become less dependent on financial benefits once the system is implemented and the companies start profiting from the newly skilled workforce (ibid.).

In many regions in Southeast Asia a mismatch between skill development that is solely based in vocational schools and the demand of the industry is evident, which often has a negative effect when trying to strengthen company involvement. Nonetheless, the focus should not be limited to enhancing employer engagement in terms of improving competence development during dual VET but also on training and qualifying valuable qualified personnel for the future – meaning investing in the **apprentice and skill development with the intention to hire**. Hence, when trying to enhance employer engagement in dual VET focusing on **industrial sectors with good prospects of growth** and a higher employment need in the future can increase their willingness to participate in dual VET. Furthermore, the stronger involvement of labor market institutions and dialogue among stakeholders can facilitate career guidance and promote skill development (dual VET) as well as employment opportunities (Martinez-Fernandes & Powell 2009, 4).

Strengthening the vocational training at the workplace in countries that have focused on vocational school-based learning thus far is a process that takes time. Moreover, the development of establishing a dual VET system is a continuous process. “This cannot happen from one day to the other. Therefore, the incremental introduction of dual training – be it in single model regions or single model sectors – can be an important step” (EPF 2017, 5). Those examples need to be evaluated and analyzed further to show the benefits and difficulties that must be addressed. The results drawn should be **published to increase the visibility of best-practice examples**. On the one hand, it increases the socially responsible image of the company involved; on the other hand, it shows companies who are considering engagement in dual VET the impacts of work-based learning in dual VET while also promoting success.

If the industry is involved in shaping the national VET system as a valuable stakeholder, the needs of the company based on their present situation can be addressed and met by updating the occupational competency standards in a participative process. Since digital technologies are continuously evolving, the production and services of companies are required to constantly adapt to innovations and alterations that influence the work processes, work-task and the organization of work. Specifically, changes in technology and production in the context of industry 4.0 and digitalization increases the demand for investment in education and skills from the viewpoint of companies.

Therefore, in order to meet these and other emerging challenges, VET institutions and professionals should collaborate with other stakeholders to further develop these mentioned approaches to enhance employer engagement and facilitate this process by continuous vocational education research. A labor market and company-oriented dual VET system driven by the participation of all stakeholder – government, industry, apprentice and related institutions – can be a solution to training and educating the new workforce for the tasks ahead and secure the retention of skilled staff.

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TVET@asia The Online Journal for Technical and Vocational Education and Training in Asia

CITATION:

Pinnow, S. (2019). The German Dual VET system and approaches to enhance employer engagement. In: TVET@Asia, issue 13, 1-18. Online: <http://www.tvet-online.asia/issue/13/pinnow> (retrieved 30.06.2019).

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Author(s) Profile



Sarah Pinnow

Research Assistant at Technical University Dortmund, Germany

E-mail: sarah.pinnow@tu-dortmund.de
