

## **VET in Peru - Dual model of vocational training in SENATI**

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### **Abstract**

This article provides an overview of the sustainable development of a dual VET model in Peru as an emerging country in the last three decades. Servicio Nacional de Adiestramiento y Trabajo Industrial (SENATI) is a private non-profit VET training institution in Peru, founded by the Peruvian National Society of Industries (Sociedad Nacional de Industrias – SNI) in 1961. The SENATI dual learning programme is industry-led and was established in 1985 to provide dual professional training (two learning venues: training company and SENATI - acting as vocational school and inter-company training centre at the same time). German dual VET and CBT, coined by the recent Anglo-American TVET sphere, have strongly influenced the design and implementation of dual learning programmes. Other topics included are vocational education, differences to CBT, company-based training and an introduction to a new research project of the Technical University of Dortmund called “PeruDual”. It will examine the factors that have led to sustainable, successful cooperation between SENATI and training companies since its inception in 1985. Research bodies are largely unaware of these factors. Using document analysis, we find that dual VET in Peru is not based on the relationship of the training companies to the vocational schools, but on the relationship of the training institution SENATI to the companies. We thus conclude that some characteristics of employer engagement (National Society of Industries and training companies) in dual VET are: dual learning (especially in-company learning), definition of qualification standards and of the new training occupations to be offered and definition when to update curriculums. The basic concepts of the dual VET model are: applied didactic, action learning and project method.

**Keywords:** *Dual VET Peru, PeruDual, SENATI, Dual VET model, profile of trainers, action oriented learning, project method*

### **1 Introduction: Dual model of vocational training in SENATI Peru**

Dual VET is in demand worldwide, and dual forms of vocational training are becoming more and more common in many countries. The model is the dual vocational training system in Central Europe, especially in Switzerland and Germany. This article deals with the qualification of skilled workers in Latin America and Peru in particular. Despite economic progress in the last decade, Peru still has comparatively low-skilled industrial workers. These industrial workers must be trained so Peruvian industry could participate in global value chains with more products. From the mid-1990s onwards, the globalization of production and services led to certain sectors of Latin American countries participating in global value creation and continuing to do so today (automobile industry in Mexico, mining industry in Peru) or manufacturing products for globally organized markets (agricultural products such as

asparagus, artichokes in Peru). International requirements and standards as well as a high level of quality are becoming increasingly important, which is why countries face the challenge of training skilled workers and professional technicians with relatively high qualifications. In contrast to competency-based training (CBT), which trains specific skills in modules for specific activities in short courses, the dual training system is expected to lead to a broader competence profile, a higher level of skills, a more thoroughly trained professional (holistic) competence with deeper understanding and broader specialist knowledge.

SENATI (*Servicio Nacional de Adiestramiento en Trabajo Industrial*) is a non-profit VET institution in Peru. In the second half of the 1990s, SENATI's dual VET model was not only influenced by the German dual training system, but also by the Anglo-American-style, CBT, modularized competence-based training and education (*competencias laborales*), that dominated at the time in almost all other Latin American countries. In Latin America, the *Centro Interamericano para el Desarrollo del Conocimiento en la Formación Profesional* (Cinterfor) of the International Labour Organization (ILO), based in Montevideo, Uruguay, had a major influence, contributing greatly to the dissemination of CBT with its small-scale competencies (Zúñiga 1998; Vargas 2004). There is a fundamental difference between competencies instead of competence! The messages that were propagated: Short training period, flexible design due to modular form, easy to use and quick to implement. Development of curricula via DACUM or "functional analysis" and the direct "translation" of requirements into competencies can be described from a German perspective as pure skills. The model for standard development in Latin America, especially the methodological approach, is the Mexican CONOCER (Hernandez 2000). In Peru, further training profiles were developed using the so-called DACUM method, (retrospective, rather than directed at future technological developments) from the end of the 1990s onwards, despite all the warnings and indications from consulting organizations in Switzerland and Germany about the weaknesses inherent in modular training plans for high qualification levels.

As different as dual VET models may be in the individual countries, in principle it is always a question of including the company as a learning venue in the training of young skilled workers. School education in connection with rudimentary forms of workshop training (*talleres*) has existed and continues to exist for a long time in many Latin American countries. They mostly originated in and around a period of industrialization which was catching up in the middle of the last century. What is still something of an unknown in research today can be formulated in two general questions: 1<sup>st</sup>: How exactly does in-company training take place in companies or how do young people learn in work-based or work-related learning settings (Dehnbostel & Schröder 2017), and 2<sup>nd</sup>: How is cooperation of companies with schools and training workshops organized, how is duality specifically developed? The new research project PeruDual, which is funded by the German Federal Ministry of Education and Research (BMBF) and conducted by the Chair of International Cooperation and TVET Systems at TU Dortmund University, is investigating these questions. In essence, a dual training model links experience-based in-company learning with systematic learning by a training organization or vocational school in a didactically intelligent way.

## **2 Peru's economy, demand for skilled workers and VET**

### **2.1 Economy, demand for skilled workers and professional technicians**

Peru is the third largest country in South America with an area of 1.3 million km<sup>2</sup>. It borders Ecuador and Colombia to the north, Bolivia to the southeast, Chile to the south and the Pacific Ocean to the west. There are 31.8 million people living in Peru (German Trade & Invest -GTAI, 2018), where the youth unemployment rate between the ages of 15 and 29 is four times higher than the adult unemployment rate (Peruvian Ministry of Labor and Employment Promotion -MTPS-, 2018). Peru's economy relies mainly on its natural resources. This explains Peru's need to be open to world trade - its economic well-being is intimately connected to the trade partnerships from which it benefits. In the last decades, Peru has increased its political and economic relations with Asia, as demonstrated by the various trade agreements they have made within the region. 92% of Peru's exports are covered by FTAs (Free Trade Agreements). Additionally, Peru is one of the few members of the Asia Pacific Economic Cooperation (APEC) and is a member of the Pacific Economic Cooperation Council (PECC).

Peru is the second largest producer of silver, copper and zinc and the sixth largest gold producer in the world. Peruvian exports amounted to \$36.3 billion in 2017, with ores and minerals accounting for 67% of total exports; agricultural products make up 11%. Industrial products were also exported to a significant extent. Industrial companies are integrated into global value chains.

Peru has a shortage of skilled workers and technicians. According to the Peruvian educational institution SENATI (2017 a), the country needs around 300,000 skilled workers every year, but only 110,000 are qualified as well-skilled workers or as professional technicians (*técnico mando medio*) per annum. Approximately 43% of companies have problems filling their vacancies (Manpower International 2019).

### **2.2 Dual vocational training in Peru and the PeruDual research project**

SENATI is a non-profit VET institution, created by the National Society of Industries in 1961 in Peru. It has an industry-led dual learning program, which offers 73 training occupations nationwide, and has more than 97,000 apprentices in approximately 16,000 training companies, with 3600 teaching instructors (SENATI 2019). Since the mid-1990s, SENATI has been providing dual vocational training. The dual vocational training has been gradually developed over the last 20 years. The different stages of development of dual vocational training and education (dual VET) in SENATI have been presented systematically by Angles & Lindemann (2018). This article makes reference to: "Design of dual vocational training in SENATI" and "Introduction of new and deepening of existing vocational pedagogical elements". However, as far as learning in companies is concerned, there are still several unanswered questions about the quality of in-company vocational training. Are small and medium-sized enterprises in particular more likely to offer informal training, or do they

provide more or less structured training according to training plans? Do companies have training personnel and how is the training personnel qualified? The new research project PeruDual is investigating these questions.

From 2019 to 2021, the research project PeruDual will examine the factors that have led to sustained successful cooperation between SENATI and the companies providing dual vocational training in Peru. The dual training model for industrial occupations in Peru, which is similar to that in Germany, has been successfully established over the past three decades. Each year there are around 97,000 young people in the dual training model and 400,000 have been successfully qualified in the last 30 years (SENATI 2018). The research project PeruDual will analyze and research the following key questions:

- a) Which requirements, functions and roles do the trainers take on in the operations?
- b) How was cooperation between learning venues specific to Peru able to develop, how did an in-company training culture develop? Which structure has been created for in-company vocational training, especially for small and medium-sized enterprises, SMEs (most young people in the dual vocational training are trained in Peru in SMEs), and
- c) Which conditions for a successful transfer of dual vocational training to Latin American countries and beyond can be identified based on the dual training model in Peru?

As a result, recommendations for action on the design of in-company training and the development of dual learning, dual VET models and the identification of further desiderata for international vocational training research and development will be sought.

After a document analysis on site in Lima, Peru, the research questions mentioned above will be pursued with qualitative methods. The question of access to businesses plays a decisive role in this. Qualitative research approaches are still fairly rare in Latin America, which is why particular attention should be paid to opening up the field of research. In order to achieve the project's research objectives from a methodological point of view, interviews are to be conducted with company owners, in-company trainers, other training personnel (for example qualified workers) and trainees in three earmarked pilot zones in training enterprises in order to collect further data. This will be done in cooperation with the Peruvian *Universidad Peruana Cayetano Heredia* (UPCH). UPCH is active in education management, but so far has only a limited vocational pedagogical profile. However, UPCH trains SENATI teachers as a part of an internal SENATI further training program. In addition, PeruDual plans to offer a component of capacity building for lecturers and selected students (SENATI trainers). Data should also be collected from trainers who have direct field access to the object of research, in-company training, in-company trainers and company management.

Survey data will be evaluated on site and presented to the stakeholders in workshops, then analyzed together to arrive at conclusions. The results as well as the additional findings from the workshops will be documented, subjected to communicative validation or prepared, evaluated and summarized under systematic criteria.

### 3 Dual VET model of SENATI

SENATI started its dual VET pilot project from 1975 until 1984. SENATI has developed its own dual vocational training model (Dual VET model). Dual vocational training takes place at the learning venues of the SENATI training centres and in training companies. From a historical perspective, the dual model has developed out of workshop training. Vocational competence development in the dual model is built on training basic skills in workshop situations, where the specialized knowledge, the theory is also instructed in SENATI. Training lasts three years. From the fourth semester onwards, training takes place alternately in the company (4 days a week) and in SENATI (one day a week). Experience-based company learning and systematic practical and theoretical learning are didactically linked. Company-based training is provided mostly by training companies affiliated to the Peruvian National Society of Industries (“*Sociedad Nacional de Industrias*” -SNI-). The pedagogical model of SENATI can be summarized under "action orientated learning and learning by doing", considering that apprentices have better possibilities to develop competencies for work by executing tasks or facing productive problems in real work situations in training companies (SENATI 2018). Workshop training within SENATI is based on action orientated learning.

The current pedagogical model of SENATI's dual VET with apprenticeship in companies comprises:

- General and vocational training [1st semester] - training in SENATI (classrooms)
- Basic vocational training [2nd and 3rd semester] - practical training in SENATI (workshops, laboratories, classrooms)
- Dual Vocational training (Specific training) [4th, 5th and 6th semester] - training is carried out in the company and in SENATI (workshops and laboratories, classrooms)

## Dual Vocational Training (VET) model:

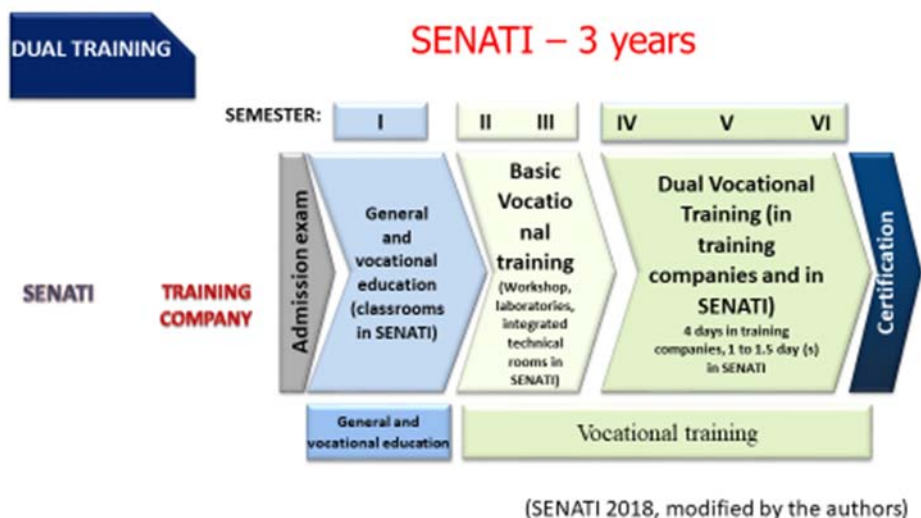


Figure 1: Dual Vocational Training Model (SENATI 2018)

SENATI offers 73 dual training occupations. Hiring SENATI graduates after they finish their training occupations is voluntary for training companies, but more than 50% of the companies do hire their SENATI trainees (Angles 2019).

The following table shows a differentiated definition of the dual training model. The criteria according to which the dual model was specified are taken from the article by Dehnbostel & Lindemann (2016): Internationalization of vocational education and training, core principles and corner points of dual system of vocational training in international vocational training.

Table 1: **Dual training model**

Criteria	Development SENATI – DUAL	Remarks
Cooperation of the state, economy and social partners	Private sector organization. The dual training system is supported by the employer's association and companies. Other social stakeholders such as trade unions do not play a role.	Cooperation with the state at the normative level: qualification frameworks, guidelines for standards, testing and certification regulations. SENATI carries out tests and issues certificates.
Learning within the working process (work-related learning in	Work-related learning in and beside work takes place in training companies. In-company learning is accompanied and continuously	PeruDual will investigate the intensity of in-company training: in informal learning or more structured learning according to training plans.

companies)	evaluated.	
Education management and education controlling (training evaluation)	SENATI organizes the dual-VET, places trainees. SENATI accompanies in-company learning, supports in-company trainers and evaluates in-company training.	In contrast to German dual VET, chambers of commerce and industry do not play any role in the dual VET-model of SENATI.
Permeability and equivalence	Dual initial training is closely linked to SENATI further training. Institutionally, there is no integration into state vocational training or education programmes.	In SENATI: promotion of general competences, language, mathematics. SENATI graduates enjoy improved access to university studies (bachelor courses)
Socially accepted national standards	SENATI develops its own standards for training programmes within the framework of government guidelines. SENATI conducts examinations independently.	The certificates are highly regarded by Peruvian companies and in a national context.
Qualified vocational training staff	SENATI has qualified trainers and lecturers and runs its own continuing education programmes. Qualified in-company trainers are available.	The research project PeruDual will investigate the degree to which in-company trainers and qualified workers are assigned to their trainees.
Places, forms and concepts of learning	At SENATI, workshops provide competence-oriented training using action-oriented methods. Companies have company training plans ( <i>plan de rotación</i> )	The working hypothesis is that training in companies follows the expert-novice model. Short briefings are common practice.

#### 4 Establishment and development of a dual training model in Peru

In the 1980s, SENATI began its dual VET learning programme (*aprendizaje dual*) as the SENATI understood and called it. Following the pilot phase, the systematic introduction and expansion of the dual training model in the Peruvian provinces (regions) began around the mid-1980s. SENATI also founded and established training centres in larger cities (Arequipa and Trujillo for example) outside Lima, the capital city. From these, the dual training system was expanded by adding the company as a learning venue to the proven workshop training system. After a phase of cooperative training in which extended company internships were integrated into the training framework, the dual training model was also introduced on a regional basis. The dual vocational training was aimed primarily at the small and medium-sized enterprises which dominated the Peruvian provinces and continue to do so today.

With the first central guidelines and a template for the organization of the dual learning model in the mid-1990s, the basic form of an in-company training plan was introduced in companies, the so-called "rotation plan" (*plan de rotación*). Owners of small and medium enterprises were encouraged to employ trainees at different workplaces and in different work processes and practices.

#### **4.1 Modernization of training at the end of the 1990s – Assessment of work requirements and design of modularized curricula**

At the end of the nineties, SENATI modernized the curricula according to the then dominant paradigm of competence-based modularized curricula of Anglo-American character. Training lasted two or two and a half years (at that time) and comprised 10 - 12 modules. Training courses with higher quality standards - e. g. car training courses - lasted 2.5 years, today these training courses last three years.

The regulatory system in Peru's economy needed modernizing. New machine generations with numerical control (keywords: CNC machines, CAD-CAM, etc.) were introduced into the companies. The maintenance of motor vehicles with electronic engine control as well as information technologies had to be mastered. Modernization was essential for motor vehicle training, electrical and electronic occupations, printing occupations, IT occupations, modern occupations in the media sector with a holistic approach to competence (Lindemann & Tippelt 2000).

SENATI had various international cooperation projects and programmes in the 1990s and above all from 2000 onwards, with the German Technical Cooperation Agency –GTZ- (*Gesellschaft für Technische Zusammenarbeit*, today GIZ, (*Gesellschaft für Internationale Zusammenarbeit*) and an organization from Switzerland acting as consultants in the implementation of the dual vocational training model.

In SENATI, the implementation of the dual training model was subordinated to the institution's own personnel development department, whose former director, Jorge Castro, coordinated implementation with the management of the organization. The implementation of dual vocational training was completed with the introduction of modernized training plans (CBT modular plans) according to the pattern of competence-based modularized training concepts and modular curricula. However, with the globalization and modernization of industrial production in Peru from approx. 1997, SENATI's management also concluded that both the quality of workshop training according to the system of small-scale competencies and the practical implementation in the workshops failed to meet the quality requirements formulated by the companies via the SENATI supervisory board.

#### **4.2 Design of dual training and education with holistic competence from 1998 to 2003**

There was enormous pressure to modernize vocational training. In the mid-1990s, SENATI was faced with the challenge of improving the quality of training (Tippelt & Amorós 2000 a),



modernizing technical training courses and at the same time developing and expanding the dual training model offering dual learning in the regional training-centres.

- Modernization of training: The first newly developed modularized curricula were available from 1997, but with a small-scale competence structure in the training modules. Work requirements were determined using the DACUM method. Curricular reorientation was strongly influenced by the Cinterfor/ILO, whose experts had also advised and supported SENATI (Zúñiga 1998). The competencies followed the approach of the so-called labour competencies (competencias laborales), which was spreading in Latin America at that time. The curricula previously developed by German experts according to the course concept were considered too extensive and outdated –which we believe up to now- has been correct. They were not viewed as modern because they were content-oriented rather than competence-oriented. There is a fundamental difference between competence (German approach) instead of competencies! However, the consultants of the OIT and the Spanish organizations had not impressed upon SENATI the idea that competence orientation must also entail a changed form of training with other training methods to activate the trainees. Competence-based modularized short training was initially regarded as the paradigm for being able to design courses quickly, introducing market-compatible, flexibly configurable training with the aim of getting young people into work in a short space of time. The DACUM method has the disadvantage of only retrospectively capturing tasks and work processes. Future technical developments, such as numerically controlled masts (CNC), new electronic systems, etc. are not included. All this stood against the implementation of a dual training model with the training of action competence for the medium-skilled worker and technician level (*técnico mando medio*)
- SENATI was faced with the problem of not having qualified trainers who could provide competence-oriented training with basic vocational pedagogical knowledge. This led to the inevitable introduction of the “Train the Trainer” programme.
- Duality: until the end of the nineties, SENATI had never surveyed how training was carried out in companies during the pilot phase. Did duality go significantly beyond an informal apprenticeship in the companies? Dual training and how to implement it, how to get in-company trainers, how to implement a dual learning model - these were the questions and problems that needed to be solved.
- Training of own specialists, own personnel for the own company? Such thinking was and is still foreign to many companies today. At the end of the nineties it was also a question of creating a new training culture based on sustainability and the quality of skilled work.

Against this background, SENATI developed workshop training on a broad scale towards the dual model, workshop training + in-company training, with consulting organizations from Germany and Switzerland at the end of the 1990s. The core of the reform would consist of the implementation of the newly modernized modular curricula in the dual mode.

Particularly from the mid-1990s onwards, the demand for qualified workers and technicians in industrial occupations continued to grow (in Germany we would speak of qualified skilled workers). Forecasts were in abundance, the globalization of value chains was on the horizon and the demand for skilled workers came primarily from growing industrial companies and export-oriented SMEs (small and medium-sized enterprises). The elements of the reform and the expansion of training while implementing a dual training model on a broad scale were as follows:

- Training of more holistic and action-orientated competence, problem solving for everyday working life, introduction of action-oriented learning in the workshops, introduction of project-oriented and task-oriented forms of learning in all dual training venues.
- Development of a training programme for trainers, development of a new profile for trainers, which is also the basis for drafting employment contracts. The requirements of vocational education were included in the employment contracts.

Rudolf Tippelt (Ludwig Maximilian University of Munich, Chair of Educational Sciences, Germany) played an important role in consultation. He has developed a whole series of handouts on the basic concepts of dual vocational training.

### **4.3 Implementation of a dual training model from 1998 to 2003**

The implementation of new CBT curricula in a dual training model was based on a holistic approach of a competence-model, a vocational-educational component of active learning in projects and with a task-oriented approach in the workshops, a personnel development component "Train the Trainer"; and an accompanying organizational consultancy to cope with the changes within the organization SENATI. The main aim should also address companies with the support of organizational development, to sensitize them and win them over to training. These work lines were transferred to the internal qualification department called "IFPI". The IFPI was directly under the national management of SENATI in Lima.

Duality – how can the cooperation of training centres, schools and companies be improved, a local network be designed? Dual forms of learning, learning in training centres and learning in the workplace appeared as virtually unknown components to the regional SENATI stakeholders and the SENATI management. SENATI knew forms and organization of in-company training from large companies mainly in Lima, where a certain training structure and training organization had been designed by the SENATI trainers, who often also had training and controlling functions in companies. There were approximate ideas as to what was available in the area of in-company training for learning by doing (influenced by John Dewey from the USA) and how in-company training should be developed systematically (work-related learning, training plan, Germany). This was also due to the internal structure of the individual training centres. On the one hand, contact to the companies was made by the management of the regional centres, on the other hand each trainer knew mostly from his own biographical experience - most of the trainers came from companies that then became training

companies - future training companies or companies to which young people were sent during the first company placements as pilots. Agreements were reached with German partners to sensitize company owners to "dual" learning and to improve communication with companies via trainer evenings and similar measures. SENATI could rely on the support of the organizational development component of its partners from Germany.

#### **4.4 Introduction of new vocational pedagogical elements and deepening existing ones**

Vocational didactic quality improvement involved technical counselling: existing curricula were modified and cautiously adapted to the challenges of respective modernization in training profiles (Tippelt & Amorós 2000 c). This process entailed cooperation with companies at the lower (local) level, and the comprehensive, in-depth instruction and qualification of management personnel and experienced trainers (multiplier model for disseminating reform) in the fundamentals of vocational training know-how prevalent in Germany at the time (multiplier model for disseminating reform). The basic elements were structured around vocational learning didactics. The project method with the principle of action orientation (*aprendizaje por la acción / metodo de los seis pasos*) aims at vocational fields of action and problem areas on the one hand. On the other hand, the projects are intended to achieve learning in complex contexts and problem areas. Trainers gradually created complex training and learning arrangements using the project method. The concept of the work and learning task entails mapping concrete manufacturing or maintenance procedures from the companies as complete work actions and implementing these in the workshop. In addition to skills and knowledge, trainers also train methodological and social skills. The new SENATI training methods sought to increase the learning competence of both the trainers (Tippelt & Amorós 2000 f) and trainees – amounting to the systematic introduction of action orientated learning, work and learning tasks, activating methods such as the project method (GTZ/Lindemann 2001 & Lindemann 2002), a new form of connecting learning in the workshop with learning in companies, cooperation of SENATI centres with companies, the fixation of the role and task of in-company trainers (Tippelt & Amorós 2000 b) and the integration of specialist trainers. The project method (Tippelt & Amorós 2000 e), the work – and learning tasks (Lindemann 2003), the promotion and training of extra-functional competences (Lindemann & Tippelt 2000), etc. were also introduced and implemented in three pilot centres with the support of the consultants. Furthermore, a compromise had to be found between the new standards of competency-based training with a modular structure and small-scale competences on the one hand and, on the other, curricular planning with broader action-oriented competences and training plans that guaranteed a minimum of sequencing of vocational learning (Tippelt & Amorós 2000 c; Tippelt & Amorós 2000 d; Lindemann 1998).

This line of work was implemented in a practice-oriented way through a multiplier model in a self-similarity, action-oriented way. The development of new professional didactic content (seminars by R. Tippelt) was followed by implementation in three pilot centres (carried out by the author HJL, each in tandem with one or two SENATI multipliers) in Lima, Arequipa

(southern regions) and Trujillo (northern regions). After a joint planning period of almost two years, these measures were implemented over a period of four years, accompanied by organizational consulting measures and the qualification of management personnel. Changing the culture of training both in the SENATI training organization and to some extent in in-company training is complex, difficult, and fraught with setbacks. Success can only be achieved through intensive intervention. After all, it is a question of changing the culture in vocational instruction in workshops, teaching and learning, a cultural change which all SENATI trainers and company training personnel must master.

#### **4.5 Duality and organization of in-company training**

Dehnbostel (2007, 11) states that “training companies consider in-company learning to be much more important than learning in courses, seminars that are offered outside the workplace and often also outside the company.”

In-company training: The basis of duality in Peru is not the relationship between chambers and companies and the vocational schools, but the relationship between the SENATI training institution, the regional centres of SENATI and the companies. SENATI offers workshop and theoretical training. Duality: this relationship was shaped in the implementation phase in such a way that trainers of respective training institutions in a region regularly visited the companies. Each trainer was assigned a certain number of companies. Visits to larger companies or to companies of former SENATI trainees were targeted, but their duration was often too limited from the authors' point of view. The trainer talked to the trainee, examined training progress and talked to the in-company training personnel. In small enterprises in both the formal and informal sectors, in which most trainees learn, discussions were situation-related, flexible and informal. The visits had a dual character: on the one hand, they were intended to have a formative influence on in-company training and, on the other, to monitor learning progress whilst ensuring that training takes place.

### **5 Conclusions and outlook for the future**

Since 1985, SENATI has developed its own dual training model from a workshop training programme that has existed since SENATI was founded in 1961. The modernization of Peruvian industry has been the main driver for the evolution of SENATI's dual model, with the objective of training the qualified workers and technicians that industry needed. The dual training model was broadly implemented from the end of the 1990s, influenced by the German dual system and a modular curriculum based on competence-based training (CBT) model. CBT influence was carried by ILO/Cinterfor in Latin America in the 1990s. The Peruvian National Society of Industry is involved in SENATI dual learning programmes in three main aspects: dual learning (especially in-company learning), definition of qualification standards and of the new training occupations to be offered, when to update curricula and its financial participation to cover SENATI operative costs. In bilateral cooperation with Germany and Switzerland, "train the trainer" programmes, applied didactical programmes for

VET were followed and a basic vocational training and education concept was created with an active and situational learning approach, project method, task orientation and much more.

SENATI is a private, non-profit educational institution with technical, operational, financial and pedagogical autonomy. This allows it to make quicker decisions, since it does not depend on the Peruvian Ministry of Education or any other Peruvian state entity. SENATI develops its own standards for training occupations, organizes dual VET independently, carries out tests and issues certificates. These certificates are highly regarded by Peruvian companies.

The implementation of dual training helped SENATI to expand nationally, creating new training centres (from 3 training centres in 1985 to 73 in 2018). Under its dual training model SENATI has qualified 97000 young people in 2018. This was possible because most of the apprentices' training has been carried out by the training companies, for which SENATI needed less investment to create regional and local (small) training centres. Without the employer engagement of Peruvian companies and the SNI, dual VET SENATI would not reach sustainability.

Companies were gradually integrated into the training system, with the duality being managed by the regional training centres and organized by instructors of the SENATI centres. The degree to which in-company learning, work-related learning goes beyond the novice-expert model of more informal learning. Whether and how in-company training plans could be implemented, whether and how in-company trainers have a more or less consistent training plan, remains in the spectrum of research in the PeruDual project which is being conducted by the TU Dortmund and two Peruvian partners (UPCH and SENATI). As a result of the research project, PeruDual recommendations will be established and disseminated for the design of company training and for the construction of dual vocational training systems. Requirements will continue to be identified and related to international VET research and development.

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