



Dual Vocational Education and Training in Serbia

Feasibility Study

Implemented by:

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

In Cooperation with:



Republic of Serbia
Ministry of Education, Science and
Technological Development

 CHAMBER OF
COMMERCE AND
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CONTENT

| | |
|-----------------------------------------------------------------------------------------|-----------|
| About the Author..... | 7 |
| Executive Summary..... | 9 |
| 1. Objectives and scope of the study..... | 15 |
| 2. Framework: Essential components of a modern dual VET system..... | 17 |
| 2.1 Defining strategic objectives for the (future) VET system..... | 18 |
| 2.2 Anchoring the dual principle in the VET programs..... | 19 |
| 2.3 Investigating the demand for (future) qualifications and competences..... | 19 |
| 2.4 Designing flexible curricula..... | 20 |
| 2.5 Leading partnership network between government and relevant stakeholders..... | 21 |
| 2.6 Ensuring sustainable financing..... | 22 |
| 2.7 Implementing lean administration and enforcement processes..... | 23 |
| 2.8 Conducting quality development..... | 24 |
| 2.9 Attracting employers to VET..... | 25 |
| 2.10 Promoting VET attractiveness to school leavers..... | 27 |
| 3. Descriptive analysis..... | 29 |
| 3.1 Main characteristics of the Serbian VET system..... | 29 |
| 3.2 Defining strategic objectives for the (future) VET system..... | 33 |
| 3.3 Anchoring the dual principle in the VET programs..... | 35 |
| 3.4 Investigating the demand for (future) qualifications and competences..... | 36 |
| 3.5 Designing flexible curricula..... | 37 |
| 3.6 Leading partnership network between government and relevant stakeholders..... | 36 |
| 3.7 Ensuring sustainable financing..... | 40 |
| 3.8 Implementing lean administration and enforcement processes..... | 41 |
| 3.9 Conducting quality development..... | 42 |
| 3.10 Attracting employers to VET..... | 43 |
| 3.11 Promoting VET attractiveness to school leavers..... | 45 |
| 4. Major challenges..... | 47 |
| 5. Roadmap for the implementation of reform steps in the Serbian VET system..... | 51 |
| 5.1 Overview..... | 51 |
| 5.2 Taking basic decisions in respect of the (future) VET system..... | 52 |
| 5.2.1 Architecture of the VET system..... | 52 |
| 5.2.2 Defining strategic objectives for the (future) VET system..... | 55 |
| 5.2.3 Leading partnership network between government and relevant stakeholders..... | 57 |
| 5.2.4 Ensuring sustainable financing..... | 59 |
| 5.2.5 Attracting employers to VET..... | 60 |
| 5.2.6 Promoting VET attractiveness to school leavers..... | 61 |
| 5.3 Designing dual VET programs..... | 62 |
| 5.3.1 Anchoring the dual principle in the VET programs..... | 62 |
| 5.3.2 Investigating the demand for (future) qualifications and competences..... | 64 |
| 5.3.3 Designing flexible curricula..... | 65 |
| 5.3.4 Implementing lean administration and enforcement processes..... | 66 |
| 5.3.5 Conducting quality development..... | 67 |
| 5.4 Adjusting legislation..... | 68 |
| 6. Concluding remarks..... | 71 |
| Abbreviations..... | 73 |
| References..... | 75 |

ABOUT THE AUTHOR

Prof. Dr. Dieter Euler (born 10.12. 1952 in Cologne) is a German economic pedagogue and lecturer at the Department of “Management in Education” at the University of St. Gallen. His expertise includes innovation in education, social competence, pedagogical development of the higher education, digital media didactics and research-based design.

Euler completed vocational training in the dual system, profile “sales data processing”. After a year of work in the function of the mentor in the company, he began studies. He studied Economy at the Vocational school in Trier (1975-1978). Upon completion of these studies he studied Economic Pedagogy at the University of Cologne (1978-1984). As a scholar of the Study Foundation of the German people, he studied Sociology and Social philosophy at the London School of Economic and Political Science (1981-1982.). In 1988 he finished his doctor studies at the University of Cologne with a dissertation titled “The ability to communicate and learn with computers”. In 1994 he received the title of professor at the University of Cologne and the same year he received an invitation to a professorship for Economic Pedagogy at the University of Potsdam. From 1995-2000 he lectured at the University Friedrich-Alexander Erlangen-Nuremberg. He declined an invitation to teach at the University of Erfurt (1999).

In year 2000 Euler transferred to the University of St. Gallen / Switzerland. He took over the “Department of Economic Education and Management in Education” and together with Christoph Metzger became a Director of Institute for Economic Pedagogy. There he is, among other things, responsible for the creation of Economic Pedagogy study course.

EXECUTIVE SUMMARY

The ambition ...

Supplying the economy with qualified labor is one of the key challenges in Serbia (and beyond). The system of vocational education and training (VET) is expected to play a major part in contributing to economic development and prosperity. However, VET is not only a functional measure for the promotion of economic goals, it also has the potential to improve the transition from school to working life and to offer young people a perspective for planning their career and thus finding their role in society.

Therefore, innovations and investment in VET are crucial prerequisites for preparing societies for the future. Serbia embarked on reform of the VET system as a part of the country's overall political and economic transition. One ambition addresses the transformation from a school-based to a *dual VET* system. Such an ambition is both demanding and promising. It is demanding because there is no blueprint on how to design the change and it is promising because there is much potential for the advancement of the current VET system. An accelerated reform of the VET system would help improve effectiveness and compliance with societal and economic needs.

This study investigates the conditions and ways to make the ambition feasible. It aims to provide relevant evidence, concepts, ideas, options, and arguments to support a rational discussion on the feasibility and modalities of a reform of the current VET system in Serbia.

Dual system – dual principle

The term 'dual system' can lead to misunderstandings, at least when communicating in a cross-cultural setting. Duality can relate to learning sites, for instance, but also to interwoven pedagogical processes. In the first case, 'duality' relates to the alternation between learning in a company and at school. In the second case, the 'dual principle' refers to the combination of theory and practice.

While the adoption of a 'dual system' along the lines of the Austrian, German or Swiss VET system depends on the existence of a whole set of cultural, political and economic conditions, the implementation of the 'dual principle' is crucial for changing the Serbian VET system.

Approach of investigation

At times it is suggested that established dual VET systems in countries such as Germany, Austria or Switzerland should be exported to other countries, such as Serbia. It is evident both in research and in practice that there is no quick and easy way to transfer a VET system to other countries. Transferring a VET system from one country to another is not merely a matter of copying the original system, but much more a process of selection and adaptation by the potential recipient country. This leads to the following approach:

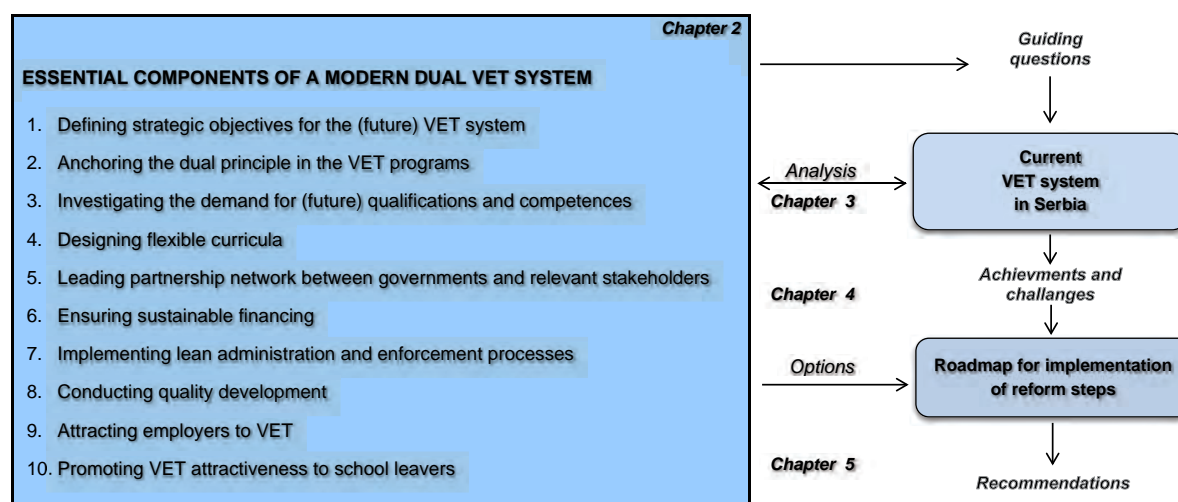


Figure: Approach of investigation

Starting off with a model of an advanced dual VET system (chapter 2), the study contrasts the ideal with the existing reality (chapter 3) and identifies the achievements and challenges (chapter 4). Subsequently, discussions on the challenges result in options and recommendations for change (chapter 5). These recommendations cannot be regarded as a substitution for the missing blueprint but as food for thought for necessary discussions among the major stakeholders in the Serbian VET system. As such, they do not offer ultimate solutions but key questions and options for answering them.

Exemplary illustration of the investigation

Two essential components of a modern VET system are “anchoring the dual principle in the VET program” (2) and “attracting employers” (9). In chapter 2, these components are explained, illustrated with examples from different countries and ultimately translated into guiding questions. The investigation results in questions such as

- How is the concerted alternation of theory and practice organized in the VET program(s)?
- How can the practical part of the VET program provide learning experiences which are genuine, authentic and conducive to learning?

for the anchorage of the dual principle (extract, full scope see chapter 2.2). With regard to “attracting employers”, questions such as the following are introduced (chapter 2.9):

- How can companies (especially SMEs) be attracted to support actively the advancement of the VET system?
- What motives and what arguments may convincingly address the willingness of companies to engage in dual VET programs?
- How can ‘poaching’ be prevented?
- What role can companies take in the development and operation of VET programs?

In chapter 3, the guiding questions are taken up and linked with available data on the Serbian VET system. The analysis results in a description of how the existing system performs with regard to these essential components of a modern dual VET system. Furthermore, achievements and major challenges are identified as a basis for subsequent recommendations.

With regard to the anchorage of the dual principle, the following achievements and challenges are highlighted (chapter 3.3): Achievements – (1) Dual principle is anchored in the Law on Secondary Education in general terms. (2) VET curricula assign lessons to practical teaching and professional practice. Challenges – (1) It remains open to what extent and quality practical instruction is implemented in the VET programs. (2) Company-based practice is limited in most VET programs. (3) A shared understanding of the quality of practical instruction as part of the VET programs is missing.

As regards “attracting employers”, the analysis results in the following summary (chapter 3.10): Achievements – Some good practices of employers’ involvement in VET programs. Challenges – (1) Attracting employers and companies for the promotion of VET on a larger scale. (2) Identifying first movers and an early majority of companies committed to providing opportunities for work-based learning and access to modern technological equipment. (3) Getting companies and employers systematically involved in processes of curriculum development. (4) Introducing a formal mechanism to safeguard the quality of practical training.

A full description of the achievements and challenges of the Serbian VET system with regard to all components of a modern dual VET system is provided in chapter 4.

Roadmap

One of the lessons learnt from the analysis of the current VET system in Serbia is that existing flaws are less due to a lack of strategic insights but more to a lack of efficient implementation. Therefore, a major next step is the development of an implementation strategy. How can the specific challenges analyzed in the previous chapters be tackled? Which options are available, which are desirable and which are feasible?

For each of the components of a modern dual VET system, the gap between an ideal arrangement and the current state of the VET system in Serbia is analyzed, options for taking action are identified and recommendations making up a roadmap for the implementation of reform steps are put forward. Finally, the areas for adjusting legislation are highlighted. The following table summarizes the recommendations:

| RECOMMENDATIONS | RELEVANT FOR LEGISLATION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 5.2.1 Architecture of the VET system | |
| Three-year VET programs: | |
| <ul style="list-style-type: none"> Key message: Three-year programs create opportunities for employment with a strong element of company-based dual VET. | |
| <ul style="list-style-type: none"> Strengthen the importance and relevance of work-based learning by involving employers in the design and operation of the programs. | ✓ |
| <ul style="list-style-type: none"> Ensure standardized, work-based learning processes in companies as a key component of the dual VET program. | |
| <ul style="list-style-type: none"> Implement reform towards dual VET profiles step-by-step. | |
| <ul style="list-style-type: none"> Consider a flexible duration for this type of VET program. | |
| Four-year VET programs: | |
| <ul style="list-style-type: none"> Key message: Four-year programs are a pathway to employment in qualified professions in knowledge-intensive occupations as well as to entry into academic studies. | |
| <ul style="list-style-type: none"> Consider different models providing flexible ways to serve the main purposes expressed in the key message: “Training by stages”; “vocational gymnasium”; “fork mode | ✓ |
| 5.2.2 Defining strategic objectives for the (future) VET system | |
| <ul style="list-style-type: none"> Confirm the strategic foundation of the VET system with its comprehensive coverage of economic, societal and individual objectives. | ✓ |
| <ul style="list-style-type: none"> Launch a process aimed at defining priorities in terms of economic sectors/occupations to be transformed into dual VET programs. | |
| <ul style="list-style-type: none"> Anticipate resistances to change and design counteractive measures. | |
| <ul style="list-style-type: none"> Agree on a definition of which characteristics make a VET program ‘relevant’. | |
| 5.2.3 Leading partnership network between government and stakeholders | |
| <ul style="list-style-type: none"> Support vocational schools to actively shape their role as part of a VET network in their region. | |
| <ul style="list-style-type: none"> Adjust legislation to incorporate the rights and duties of companies in a dual VET system. | ✓ |
| <ul style="list-style-type: none"> Define the facilitating role of the Chamber of Commerce to take major responsibilities with regard to the company part of the dual VET system. | ✓ |
| <ul style="list-style-type: none"> Revise the role of the Council for Vocational Education and Adult Education (CVEAE) to serve as a coordinating and decision-making body in charge of all VET affairs. | ✓ |
| <ul style="list-style-type: none"> Introduce research capacities backing the development of the VET system. | ✓ |
| 5.2.4 Ensuring sustainable financing | |
| <ul style="list-style-type: none"> Use resources saved from the demographic decline and the reduction of lessons in the dual VET system for the implementation of the reform. | |
| <ul style="list-style-type: none"> Start incrementally introducing a co-funding model involving companies and students for ensuring sustainable financing as soon as dual VET programs have been consolidated. | (✓) |
| <ul style="list-style-type: none"> Introduce a remuneration scheme for apprentices who spend most of their time in a VET program in a company. | |

| RECOMMENDATIONS | RELEVANT FOR LEGISLATION |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 5.2.5 Attracting employers to VET | |
| <ul style="list-style-type: none"> Collect a portfolio of convincing arguments for attracting employers to participate in a dual VET program. | |
| <ul style="list-style-type: none"> Distinguish useful areas for participation. | |
| <ul style="list-style-type: none"> Collect showcases and good practices of economic sectors or companies benefitting from their participation in a dual VET program. | |
| <ul style="list-style-type: none"> Identify trustworthy institutions and experts to persuade companies to join dual VET programs. | |
| 5.2.6 Promoting VET attractiveness to school leavers | |
| <ul style="list-style-type: none"> Campaign for a specific VET program by addressing the key motives of young people when deciding on their career choices. | |
| <ul style="list-style-type: none"> Start introducing career options in VET as early as in primary school. | |
| <ul style="list-style-type: none"> Introduce showcases and good practices for raising awareness of and interest in a specific VET program. | |
| <ul style="list-style-type: none"> Make sure that a specific VET program can deliver what is promised (in terms of quality and employment prospects). | |
| 5.3.1 Anchoring the dual principle in VET programs | |
| <ul style="list-style-type: none"> Ensure that the share of practical learning in a VET program is predominantly offered in companies. | ✓ |
| <ul style="list-style-type: none"> Stipulate minimum quality standards for company-based learning in the law (in general terms) and the curriculum. | ✓ |
| <ul style="list-style-type: none"> Organize support and incentives for companies for implementing high quality practical learning. | (✓) |
| <ul style="list-style-type: none"> Implement monitoring and sanctioning processes to counteract companies not willing to live up to their responsibility within a VET program. | ✓ |
| 5.3.2 Investigating the demand for (future) qualifications and competences | |
| <ul style="list-style-type: none"> Make research capacities available to collect data on future qualification requirements | ✓ |
| <ul style="list-style-type: none"> Assemble expertise from the educational and the economic sector for identifying and agreeing on competences required to deal with future challenges. | ✓ |
| <ul style="list-style-type: none"> Mandate the Ministry of Education, Science and Technological Development (MoESTD) for the school part and the Chamber of Commerce for the company part to facilitate the development and specification of future-oriented VET curricula in their area. | ✓ |
| <ul style="list-style-type: none"> Ensure that drafted curricula are state-of-the-art. | ✓ |
| 5.3.3 Designing flexible curricula | |
| <ul style="list-style-type: none"> Divide curricula into modules. | ✓ |
| <ul style="list-style-type: none"> Avoid modules being too fine-grained. | |
| <ul style="list-style-type: none"> Consider connecting modules with integrative units in order to enable learners to gain a comprehensive understanding of the processes. | (✓) |
| 5.3.4 Implementing lean administration and enforcement processes | |
| <ul style="list-style-type: none"> Design administrative and enforcement processes to be as lean as possible. | |
| <ul style="list-style-type: none"> Substitute the current (supply-driven) enrollment system with a demand-driven admissions system. | ✓ |
| <ul style="list-style-type: none"> Stipulate appropriate contractual arrangements on the rights and duties of the parties with regard to apprenticeships and traineeships. | ✓ |
| <ul style="list-style-type: none"> Organize exam committees (involving representatives from the different learning venues) on the local/regional level and define responsibilities and processes for holding exams and awarding degrees. | ✓ |
| <ul style="list-style-type: none"> Introduce criteria stipulated in the law for approving the suitability of companies to participate in a VET program. | ✓ |

| RECOMMENDATIONS | RELEVANT FOR LEGISLATION |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 5.3.5 Conducting quality development | |
| <ul style="list-style-type: none"> Consolidate existing approaches introduced for the school part of the VET system and transfer them into a unified, quality framework addressing the key questions of quality development. | (✓) |
| <ul style="list-style-type: none"> Introduce minimum quality standards for licensing companies to participate in VET programs. | ✓ |
| <ul style="list-style-type: none"> Conceptualize key quality factors for analyzing and developing the quality of work-based learning. | (✓) |

Role of the Chamber of Commerce

For implementing the dual principle in a modernized dual VET system in Serbia, it will be crucial to attract employers and companies and introduce support mechanisms to assure the quality of the learning processes in both learning venues. It is thought that the Chamber of Commerce will become a major driver of the reform of the system, especially the company part. Among others, the Chamber of Commerce is supposed to take on the following tasks:

- Promote the processes of change towards the dual VET system, especially among economic stakeholders.
- Identify economic sectors and occupations suitable for transformation into dual VET programs in the launching phase of the new VET system.
- Identify occupations in urgent need for qualified employees and/or modernized curricula.
- Convince employers and companies to participate in dual VET programs.
- Support the administration and enforcement processes (e.g. take stock of the apprenticeship contracts, monitor compliance with legislative regulations; promote the acceptance and quality of dual VET offerings especially with regard to in-company training; organize exams; approve companies to train apprentices)
- Facilitate networks and communities for sharing good practices among companies.
- Organize a portfolio of offerings for companies (e.g. counselling, training) to support the transformation process towards the implementation of dual VET programs.
- Implement a quality development system for the company part of the system.
- Participate in processes of qualification analysis and the transfer into curriculum development.
- Participate in the (new) Council for Vocational Education and Adult Education (CVEAE).
- Introduce a levy-system in specific economic sectors based on the approval of companies.

Currently, the Chamber of Commerce does not have the capacity to carry out tasks like these efficiently. For this reason, there needs to be discussion of how respective responsibilities can be incorporated into the existing or new organizational structure of the Chamber.

Finishing but not ending ...

There is one limitation which is mentioned several times in this study. The VET system is part of the overall economic, social and cultural system in Serbia, and, in particular, the economic situation is of key importance when assessing the role VET can play in the advancement of Serbian society. Given the fragile structure of the current Serbian economy, the starting basis for reform of VET does not seem to be very favorable. However, change theories contend that in times of strain and pressure, changes are much easier to launch than in times of prosperity and success.

1. OBJECTIVES AND SCOPE OF THE STUDY

The Ministry of Education, Science and Technological Development and the Chamber of Commerce have set up a task force to explore ways to introduce a dual system of vocational education and training (VET) in Serbia. This study aims to provide relevant evidence, concepts, ideas, options, and arguments to support a rational discussion on the feasibility and modalities of a reform of the current VET system in Serbia.

Labor market statistics indicate that most unemployed people are graduates from secondary education (ETF, 2014, 4). This gives rise for consideration of whether the link between the labor market and secondary education, including VET, can be strengthened (MoE, 2012a, 101). Serbia has made significant progress in defining vision, strategic objectives and legislative regulation, but implementation of the measures that could bring change to the current situation is still challenging. There is a widespread assumption that so far the current VET system does not sufficiently provide the qualifications necessary to advance the economy and to support companies in their struggle to meet future demands on national and global markets.

VET is regarded as an important pillar for shaping the economic and societal future of Serbia. In general, there are considerable expectations that the shift towards a dual VET system similar to that in countries such as Germany, Switzerland or Austria would be a huge step forward. And indeed, there are strong arguments pointing out that a dual VET system has the potential to improve considerably the transition from compulsory schooling into working life.

But good intentions need good implementation in order to achieve an impact. And good implementation requires the right assumptions in order to start in the right direction. Before going into the details, some **major assumptions** should be pointed out:

1. Any national VET system is a tool for achieving higher-ranking objectives, which may differ from one country to another. In principle, there is no 'best' system. Each system can be judged only by its success in achieving the aims for which it has been designed. Some countries, for instance, view VET primarily as an economic policy instrument, whereas in other countries VET is also linked with social and educational objectives. For example, the normative foundation in Germany dates back to Kerschensteiner's theory of vocational training, among other things, where he saw the VET system that was in place over 100 years ago as a means of integrating vulnerable (male) adolescents into society and reducing the risk of political radicalization (Zabeck, 2009, 491).
2. A national VET system is embedded into and influenced by other social subsystems. It can happen that the VET system in a particular country is less developed, but that the country's system of advanced training plays a comparable role for the purpose of qualifications and is more highly developed as a result (e.g. in Ireland or the USA; OECD, 2010, 37). Deißinger (1997, 180ff.) points out, for example, that in the French VET system, the corporatist element of a self-regulatory body or chamber is missing due to the centralized structure of French society, meaning that the German system, in which this body plays a key role, could not be transferred easily. In his comparison of Germany and France, Lutz (1976) concludes that the lack of qualified personnel in France corresponds with workplaces that have a more pronounced division of labor and a stronger separation between managerial and operative work. This arrangement in the employment system is supported by structures in the education system. General schools turn out a larger proportion of managers and a comparatively low proportion of personnel for intermediate positions. Correspondingly, skilled workers are largely recruited from the functional areas of the education system. As a result, the institutional context, the harmonization of the education and employment system, and cultural norms must be taken into particular account when considering the possibility of advancing a VET system.
3. Instead of having just one system, virtually every country has different types of VET; combinations of learning sites and VET programs that are implemented. For example, in the German and the Austrian VET systems, there are both dual training-based occupations and school-based vocational training courses. The differences continue when one compares two supposedly identical VET systems, such as the German and the Swiss systems. The dual systems of the two countries differ significantly in terms of their legal basis, the authority granted to learning sites for administering examinations, the duties and responsibilities of vocational schools, and the cost structures, among other things.

4. On the other hand, similarities can be drawn between systems that are often regarded as separate. There is no longer any fundamental difference in the combination of theory and practice between dual and school-based types of VET, but there is variation in the proportions of these two key areas and in the forms of implementation. The term 'dual system' can lead to misunderstandings, at least when communicating in a cross-cultural setting. Duality can relate to learning sites, for instance, but also to interwoven pedagogical processes. In the first case, 'duality' relates to the alternation between learning in a company and at school. In the second case, the 'dual *principle*' refers to the combination of theory and practice. The dual principle can be implemented regardless of the type of training, including as part of school-based courses of training.
5. There is no correlation between the quality of VET and its type. In both dual and school-based training, the quality of implementation may range from very good to very poor. Differences are probably greater within each type of VET than between the different types themselves.
6. It is often suggested that Germany should export its VET system to other countries. Some argue that this would promote economic growth in the importing countries while others see it as a way of dramatically reducing the rate of (youth) unemployment. A closer look shows that transferring a system, or parts of it, involves more than mere duplication. There is no quick and easy way to transfer a VET system, or individual components, to other countries. Transferring a VET system from one country to another is not merely a matter of copying the original system, but much more a process of selection and adaptation by the potential recipient country. A country will not adopt reforms in its own VET system with a view to importing a training model, but will selectively choose those elements of a system that appear to offer a benefit, and adapt them in such a way that they can be integrated into the existing structures and cultures.

Given these considerations, the study does not intend to impose ready-made solutions from above. Rather, it is meant to support the ongoing processes to advance the existing VET system in Serbia by providing useful data, experiences and conceptual ideas. Any change within the Serbian VET system has to be rooted in existing cultures, traditions, institutions and values.

Thus the **objectives of the study** are as follows:

- Identify the essential components and processes making up a modern dual VET system (chapter 2).
- Analyze the current VET system in Serbia, resulting in a description of how the existing system performs with regard to the essential components of a modern dual VET system (chapter 3).
- Place focus on the major challenges to be tackled in order to arrive at an effective dual VET system in Serbia (chapter 4).
- Suggest a roadmap for implementing reform options addressing the challenges (including changes in legislation) (chapter 5).

The data basis for the study resulted from an extensive literature review and an appraisal mission from April, 6-9, 2015. During the appraisal mission interviews were conducted with representatives from the following institutions:

- Representatives from GIZ VET Belgrade
- Ministry of Education (MoESTD)
- Headmaster and teacher from a Polytechnic School in Kragujevac
- Head of the Personnel Department of UNIOR in Kragujevac, a company committed to an active involvement in VET programs
- Chamber of Commerce
- Members of the working group for crafts and technical education (representatives from the Institute for the Improvement of Education, the National Employment Service, the Council for Vocational and Adult Education).

2. FRAMEWORK: ESSENTIAL COMPONENTS OF A MODERN DUAL VET SYSTEM

For the purpose of analyzing or advancing a VET system such as the Serbian one, a VET system should not be viewed as a single entity, but rather in terms of its various components. As a result of a comparative analysis of existing VET systems, ten major components making up a modern dual system will be distinguished (Euler, 2013). In this chapter, these components are briefly introduced and accompanied by questions guiding the analyses of the Serbian VET system in the subsequent chapter. The analysis, along the components, allows for the identification of challenges to be addressed and serves as a basis for the development of options for improving the current system.

| Essential components of a modern dual VET system | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. Defining strategic objectives for (future) VET system 2. Anchoring the dual principle in the VET programs 3. Investigating the demand for (future) qualifications and competences 4. Designing flexible curricula | <ol style="list-style-type: none"> 5. Leading partnership network between government and relevant stakeholders 6. Ensuring sustainable financing 7. Implementing lean administration and enforcement processes 8. Conducting quality development 9. Attracting employers 10. Promoting VET attractiveness for school leavers |
| Explanation → Analysis → Challenges → Options → Implementation | |

Figure: Framework of essential components of a modern dual VET system

Before elaborating on the components, some basic terms shall be introduced:

- *VET system* is the overarching and broad term covering all the existing VET programs in a country.
- *VET programs* comprise the organizational framework for any VET offering in an occupational area. At the least, a VET program should foresee regulations on the following aspects:
 - Admission rules
 - Curriculum based on the occupational profile
 - Role and responsibilities of learning venues (duration, competences, etc.)
 - Exams, certification, entitlements
- VET programs are provided by *learning venues* such as VET schools, companies, training centers, etc. Basically, a VET program can be offered in different ways and different combinations of learning venues.
- The competences and qualifications to be acquired are defined in *occupational profiles* (in some documents these profiles are termed as 'educational profiles'; both terms are used synonymously). These profiles are closely linked with the curriculum of the respective vocation.

The link between the various terms is illustrated in the following chart:

| Occupational profiles | Learning venues | VET school | Company | Training center | ... |
|-----------------------|-----------------|--------------|---------|-----------------|-----|
| 1 ... | | VET programs | | | |
| 2 ... | | | | | |
| ... | | | | | |
| n ... | | | | | |

Figure: Link between basic terms to address a VET system

VET programs may have different implementations in terms of the method and scope of involvement of learning venues. A specific occupational profile may be offered in a VET program which is primarily school-based, while another profile is offered in a dual mode. Also, a specific profile may be run as school-based and as a dual VET program at the same time.

2.1. Defining strategic objectives for the (future) VET system

VET, while part of the overall education system, is also closely related to the economic system and the labor market. Apart from these links, VET may serve social purposes by providing vulnerable young people with a promising outlook after school. And last but not least, VET can promote the personal development of young people in their transition from school to work. Thus, the function and strategic objectives of the (future) VET system can be manifold. For the design of the system and the provision of respective programs it is vital to build on clearly defined strategic objectives covering the main purposes of the system.

VET systems differ in their addressing and prioritizing of strategic objectives. Some expect VET to contribute primarily to economic productivity, innovation and the adequate supply of qualified labor to companies. In the economic realm, the goal is to ensure that individuals are employable and able to make a living. Also important from an economic perspective is the efficiency of the VET system itself. The social dimension refers to VET as a means of promoting the social integration of the younger generation, both in the workplace and in society at large. From that perspective, a VET system should be designed to prevent social marginalization and to integrate young people smoothly into training and employment. The individual dimension refers to the role of VET in developing the skills individuals need to meet challenges on the job as well as in other aspects of their life. VET should provide an opportunity for individuals to shape their own life, develop themselves to their full potential, and increase their self-efficacy and motivation to learn.

One major aspect in that context is the decision of whether VET is based on the concept of vocation and broad occupational profiles. Following this idea, occupational profiles converted into VET programs should be specific enough to prepare graduates for qualified employment, but also broad enough to enable them to adapt flexibly to changing requirements on the labor market and thus increase their individual mobility (Euler, 2013, 24). The contrasting model would be to train people to function in narrowly-defined workplaces and to carry out jobs confined to specific companies.

Guiding questions:

- What are the strategic objectives and related functions of the VET system?
- How are economic, societal and individual objectives addressed?
- What are the target groups of the VET system in terms of social status, age and formal requirements?
- To what extent do the objectives reach beyond the requirements of the current needs of the labor market or specific companies (e.g. broad occupational profile enabling VET graduates to work in different sectors and companies)?

2.2. Anchoring the dual principle in the VET programs

As pointed out in chapter 1, a distinction should be made between the ‘*dual system*’, which refers to a specific configuration of learning venues and institutional frameworks, and the ‘*dual principle*’, which refers to the concerted alternation between theory and practice. The dual principle is, therefore, a core element of the dual system, but it might also be implemented within other combinations of learning sites.

Learning venues offer different opportunities for learning. Practical in-company training facilitates holistic learning in real-life situations and exposes learners to an authentic working culture. On the other hand, training sites outside of the workplace offer opportunities for in-depth reflection and for tailoring the learning process more closely to each learner’s situation.

Ideally, the practical part of VET should be provided in authentic, real-life situations, but there can also be well-founded and convincing ‘second best solutions’. Practical learning can take place in the school setting, just as theory can be part of in-company training. This contradicts the widespread yet problematic view that businesses teach only practical skills and schools only theory. Various combinations of learning sites, with different amounts of time spent at each, can achieve similar benefits. The essential feature is a combination of theory and practice, reflection and action, thinking and doing. Following that line of argument, two factors are crucial in establishing sustainable learning processes: (1) a concerted alternation of theory and practice ideally provided in different learning venues; (2) a high quality of learning experiences in each of the learning venues.

In virtually all countries where dual VET systems exist, there is a mixture of dual and other types of VET programs. The proportions or ratios between these complementary programs differ between the different countries (Euler, 2003, 33). In Austria, for example, school-based programs have been established alongside dual VET programs with a strong anchorage in work-based learning at companies. The attractiveness and reputation enjoyed by the different types of VET among the target groups in these countries also varies greatly.

To sum up: Within a country there may be different types of implementation of a VET system. Accordingly, different VET programs may be in place following different circumstances in occupational areas or economic sectors. The key characteristic in any of these is the implementation of the dual principle, which means the concerted alternation of theory and practice and especially the integration of work-based learning phases with a high level of quality.

Guiding questions:

- How is the concerted alternation of theory and practice organized in the VET program(s)?
- What learning venues are involved in running a VET program? What contribution does each learning venue have to achieve to implement the dual principle?
- How can the practical part of the VET program provide learning experiences which are genuine, authentic and conducive to learning?
- How is the quality in the learning venues in tapping the full potential for practical and/or theoretical learning?

2.3. Investigating the demand for (future) qualifications and competences

The strategic objectives need to be broken down into qualifications and competences which give the VET program direction and provide concrete objectives. With regard to terminology, it is important to consider that terms may be used differently in different countries. One example of this is the German term “Kompetenz,” which is currently in wide use despite carrying a different meaning to the words “competence” and “competency” in England or Australia, for example (cf. Deißinger, 2013, 344; Gonon, 2013, 73ff.). A slightly different meaning is often implied with the word ‘qualification’ when it is used for those competences which are functional to specific work processes. A similar variety of terms can also be found in Serbian VET strategy documents: “The mission of the secondary vocational education and training (hereinafter referred to as ‘VET’) is to provide every individual with the opportunities and conditions to acquire *knowledge, skills, abilities and attitudes* – professional *competences* for effective integration into the world of labor or further education.” (MoE, 2012a, 97) On the same page, the vision points out that “in 2020, the VET needs to provide an opportunity to students to gain relevant *qualifications*...”

In the following text, ‘competence’ and ‘qualification’ are used synonymously. Both terms indicate what

people are to learn in a VET program in terms of knowledge, skills and attitudes.

In order to increase the validity and relevance of a VET program, the process of assessing and accommodating the demand for qualifications is vital. First of all, some criteria should be introduced for deciding on when to launch a new VET program. Not every need expressed by just a few companies should result in a new VET program. Instead, there has to be a balance between a broad coverage of the main qualification requirements of the economy and a limited number of profiles to keep the overall system transparent and manageable. For example, in Germany there are 330 recognized occupational profiles (2014), in Switzerland with similar structural conditions there are just 230 (2014) and in Austria there are 199 (2014). Obviously, there is a conflict between having VET programs narrowly defined for specific branches and their workplace requirements, on one hand, and VET programs with a broader scope covering many occupational areas, on the other hand.

Criteria guiding the creation of new VET programs may comprise the following aspects:

- What is the minimum number of expected participants in the VET program to be launched?
- Are there already VET programs which already cover part of the newly planned program? Is there potential to link the programs covering a broader scope of qualifications?
- What target groups shall benefit from the planned VET program?
- Which stakeholders are to be involved in the process of developing the new program (e. g. employers and trade union representatives, VET schools, researchers with expertise in the respective area)?
- How shall the link and permeability be defined between the VET program, continuing education and academic education?
- What competences in terms of knowledge, skills and attitudes make up the new program? Are the competences short-lived or are they required on a longer basis?

A major challenge in the process of developing new or updating existing VET programs is the quality of data leading to an attractive and valid competence profile. Basically, two components seem to be important in this process: (1) Key stakeholders (in particular including those from the employers' side) have to be included carefully in the process. (2) There has to be a body or institution pro-actively facilitating the process. For example, in Germany the Federal Institute for VET (BIBB) is dedicated to the ongoing improvement of the VET system. The BIBB acts as the interface between policy-makers and academia and has a strong focus on research into VET. It places particular emphasis on qualifications research and the early detection of skill needs. It conducts and commissions in-depth analysis and research on (future) qualifications which flow in the development or updating of VET programs.

Guiding questions:

- What criteria should guide the creation of new VET programs?
- Which stakeholders are to be involved in the development and updating of VET programs?
- What approaches and research capacities are available to investigate the demand for (future) qualifications in a systematic way?
- How can competence profiles and curricula within VET programs be updated in times of rapid changes and continuous developments in terms of the economy and society?

2.4. Designing flexible curricula

The knowledge, skills and attitudes which are the components of the competence profile are all documented in the curriculum for a VET program. Getting the major stakeholders and experts in the occupational area to join the process of curriculum development can be an important step towards the acceptance and implementation of the result.

As the resulting curriculum has to be implemented in different schools, companies, or other learning venues, it needs to be quite flexible in order to meet the highly heterogeneous conditions with regard to the learners' personal background and the institutions' organizational background. Thus, striking a balance between standardization and flexibility is an essential feature of any curriculum for a VET program.

It is evident that there is no general yardstick for defining the right balance for any VET program. At this point, two exemplary approaches are introduced to put this component of a modern VET system into more concrete terms. So, how can flexibility be built into the structural framework of the curriculum?

One obvious way is to structure the curriculum into modules. In addition to decisions on the size of the modules, the separate modules can also be distinguished in terms of those which are mandatory and those which are not. In 2006, Austria introduced a modular concept with three types of modules. *Base* modules are mandatory, while apprentices can choose a given number of the offered *main* modules. Then there are *special* modules which are optional according to the special interests of the apprentice or the requirements of the company. “Since training in the base module and in at least one main module is obligatory, broad basic training is guaranteed. At the same time, different modules can be combined with one another in a modular apprenticeship, which gives the companies and apprentices the advantage of designing the training program flexibly.” (Bliem et. al., 2014, 94). Comparable structures have evolved in the German VET system, although the term ‘module’ is avoided due to controversial discussions between different stakeholders (Euler, 2013, 56).

A second major approach to allow for flexibility is to keep the curricular standards quite general and open to interpretation. This means that it is up to the responsible personnel in the learning venues to adjust the standards to the given circumstances. This approach implies a shift of responsibility from the central authority to those who are in charge of the implementation. In some countries, concepts for a semi-autonomous school have been introduced and tested within the scope of a new public management philosophy (Euler, 2003). Moreover, forms of output control are favored that prescribe learning outcomes, but leave room for the ways of achieving these outcomes to be decided on-site.

Guiding questions:

- Does the curriculum meet the heterogeneous conditions in the learning venues?
- Is the balance between standardization and flexibility acceptable for the major stakeholders of the VET system?

2.5. Leading partnership network between government and relevant stakeholders

Dual VET systems have one common characteristic: There is a governance model organizing the broad support of relevant stakeholders without compromising the ultimate responsibility of the government. So the key concepts are participation of stakeholders, leadership in cooperative networks and state responsibility. Who are the ‘relevant’ stakeholders? On one hand, there are those who are directly involved in the VET programs, namely the learning venues (VET schools, companies, training centers) and people taking responsibility for the management and the learning processes in these institutions. On the other hand, one should consider all those concerning themselves the advancement of the VET system, e. g. chambers, employers’ associations, employment agencies, trade unions, and academics. Cooperation and participation can be regarded as an inevitable component for the effective operation of the dual VET system. Without the buy-in of the non-governmental stakeholders, the VET programs cannot reach their potential.

In detail, there are two dimensions to be vitalized.

The *institutional dimension* takes care of the roles and responsibilities of the various bodies which are part of the partnership network. As every political system has specific traditions, origins and cultural roots, the key stakeholders may be different from country to country. Of course, the ministries with responsibilities in VET are involved as well as stakeholders from the education system (e. g. general schools providing vocational guidance, secondary schools involved in VET programs, universities responsible for teacher education). Furthermore, stakeholders from the economic system should have their say (e. g. chambers of commerce, professional associations, trade unions and leading edge companies). Stakeholders from the civil society may also get involved (e. g. foundations, welfare associations taking care for vulnerable social groups). Apart from these potential stakeholders, there may be coordination and supporting bodies designed to deal with strategic issues and keep the momentum and dynamics in the VET system going. For example, these could be a council with members with high expertise and trustworthiness and/or an institute organizing experts on forward-looking topics and preparing decisions on defined processes. The Federal Institute for VET in Germany and the Federal Advisory Board on Apprenticeship in Austria are just two examples for such catalyzing units.

The *process dimension* deals with the key processes necessary to run an efficient VET system. Besides defining these processes, the participation and roles of the respective stakeholders should be considered. Potential processes could be:

- Reform of the legal framework
- Development of curricula

- Conduct of exams
- Training of VET personnel
- Implementation of quality assurance
- Supervision and monitoring of learning venues
- Cooperation between learning venues
- Admission to VET programs

Guiding questions:

- Which relevant stakeholders are part of a partnership network taking care of the running, advancement and continuous modernization of the VET system?
- What are the key processes to be organized in order to make the VET system run efficiently?
- What roles do the stakeholders take in the key processes and how are the respective responsibilities shared?
- What role and responsibilities do government bodies take in the partnership network?
- Who is in charge of catalyzing the processes to keep the VET system up to date?

2.6. Ensuring sustainable financing

In principle, there are two ways of financing a VET system. One option is public funding by allocating taxpayers' money to cover the various expenditures within the VET system. The second option would be a co-funding model charging all those who benefit from the achievement.

What costs and benefits have to be taken into account? Roughly, the following cost categories may be distinguished:

- Personnel costs for teachers and trainers
- Costs for equipment and material in schools and other learning venues
- Remuneration of apprentices (or trainees, students)
- Costs for administration, maintaining the infrastructure, conducting exams, etc.
- Advanced training measures for training personnel
- Support services for special target groups or companies (e. g. socially deprived groups with learning problems, subsidies for disadvantaged branches or companies).

The costs have to be offset against the returns. Among others, the labor productivity of apprentices or trainees as well as the opportunity to draw on graduates who are familiar to the employer and do not need any vocational adjustment may be strong motives for companies to invest money into VET. For the German and the Swiss VET systems, data were collected as part of a cost-benefit calculation, and the results vary depending on the specific VET program. On average, in Germany there have been gross costs of €15,288, returns of €11,692 and net costs of €3,596 € per trainee and year (BIBB, 2012, 262). In Switzerland, the figures are more favorable, resulting in net benefits for the overwhelming number of VET programs (BBT, 2011, 19).

On an operational level, each country has to implement a financing model which is both sustainable and well-founded. In general, one could argue that those benefitting from the VET program should adequately contribute to the costs. Following that rule, contributions may come from the state (e. g. responsibility for a thriving economy, the well-being of its citizen and taking care of vulnerable social groups), from the company (e. g. recruiting qualified labor) or the trainee paying tuition fees (e. g. gaining competences increases their income, job security and work satisfaction). In countries such as Germany, Austria or Switzerland, the government and the business community contribute in different ways to VET financing. The 2012 report on education expenditure shows that in the area of VET, contributions from the public sector totaled 57.2 percent, while private entities contributed 42.8 percent of the total (Euler, 2013, 40). A detailed examination shows an uneven distribution of costs and benefits across companies. While some businesses train more workers than necessary, others fail to meet their quota or provide no training at all. In other words, they shift costs to other companies and the government, in effect acting as free-riders. As far as financing is concerned, the following alternative strategies might be considered, rather than having companies bear the entire cost of training:

- A levy-system on a national level or at the level of economic sectors could be introduced. For example, in Denmark every company makes a contribution to a fund based on its number of employees. A foundation manages and distributes this money, which is used to pay the costs of attending vocational school and to finance inter-company training; in addition, subsidies are paid to companies that provide training positions (Grollmann et al., 2004, 643). In Germany, this system is applied in the construction industry, where an equalization fund has been established through collective bargaining. Under this system, all construction companies pay a percentage of their payroll costs into this fund, which is used to compensate companies for the fees and costs associated with inter-company training and/or a proportion of the wages paid to trainees. A similar approach is found in Switzerland, where a VET fund has been set up by professional organizations (“Organisationen der Arbeitswelt”); the government is able to make participation in this fund mandatory for all companies in a given industry.
- A similar rationale is reflected when a solidarity contribution is introduced at the level of the Chamber of Commerce, with some inter-company training activities financed by contributions from all of the associated companies.
- The English apprenticeship system is funded largely by government subsidies. For example, the National Apprenticeship Service covers 100 percent of wages paid to trainees, and companies also receive compensation for providing training positions (Evans & Bosch, 2012, 20)
- Another option would be to add a year of government-funded basic vocational preparation in a limited number of occupations, to be followed by dual training run by companies. As a result, young people entering company training would already have achieved a certain skill level and could be assigned to more productive tasks, which would substantially reduce the financial burden on companies. This type of system is found in Norway, for example (OECD, 2010, 50). All students attend secondary school until the 10th grade. At that point they decide whether to go directly to a university or begin vocational training, which lasts four years. The first two years are spent at school, with the first being an orientation year and the second devoted to basic vocational training in one of 15 occupational areas. The trainee then enters into a contract with a company to participate in a two-year course of practical training in one of Norway’s 220 recognized training-based occupations. Company- and school-based training phases alternate with one another, with the specific arrangements depending on the respective occupation. Training concludes with a final examination and the awarding of a certificate. Young people who are unable to find a training position have the option of school-based training that ends with a comparable final examination.

Guiding questions:

- Who is to contribute to the financing of the VET system?
- According to tradition and well-rehearsed practices: What contributions can be expected by companies which benefit from qualified labor?
- What financing models should be implemented?

2.7. Implementing lean administration and enforcement processes

Both the acceptance and effectiveness of the VET system relies on a transparent administration and enforcement of the regulatory framework. For example, the administrative burden imposed on companies should be as lean as possible. “Otherwise it may be seen as a disincentive. In some countries, apprenticeships suffer from a bad reputation among employers due to the perception of high levels of paperwork involved. This negatively affects the supply of apprenticeship placements” (European Commission, 2013, 12).

What has to be regulated and who is going to be in charge of the enforcement of the regulations? – Four key processes are inevitable from an administrative perspective:

- Admitting candidates for starting an apprenticeship.
- Stipulating a contractual basis for the apprenticeship.
- Organizing exams and awarding certificates.
- Approving companies to train apprentices.

Many authors emphasize the high importance of both the regulatory framework and its enforcement by a contractual basis. The International Labor Organization (ILO) argues that legislation should “recognize the unique status of the apprentice as learner and secure the right to high-quality training with strong transferable elements; set out the right of apprentices to a training allowance ...; set a minimum duration for the apprenticeship and secure provision for career progression ...” (ILO, 2012, 11). Dustmann & Schönberg (2012, 21) point out that beyond the regulatory framework the enforcement of apprenticeship contracts need particular attention.

The organization and administration of exams can be done in different ways. There are two contradicting principle which are applied in different dual VET system. The Swiss VET system follows the principle: “Those who are responsible for the teaching and training can also conduct the exams!” Therefore, the exams are taken by the trainers in the companies and the teachers in the VET schools based on a fixed plan stretched over the duration of the apprenticeship. The ultimate responsibility for the correctness of the processes is assigned to a government office in the region. As opposed to this, in Germany, the responsibility for the exams is assigned to the chamber which acts on behalf of the public administration. For each occupational profile, the chamber establishes a committee with experts from the different learning venues who concern themselves with the quality of the assessment. The certificate is issued by the chamber.

Apart from introducing clear regulations with regard to the key processes, there is also a need to support both the apprentices and the companies. Here intermediary bodies such as chambers can play an important role. Apprentices should have the opportunity to state their grievances to a body which then looks into them. Companies should find support when confronted with problems in the implementation of the apprenticeship. SMEs in particular face particular challenges when engaging in VET, given their “limited resources and lack of familiarity with the WBL (Work-Based Learning) regulatory and administrative framework. Their engagement can be encouraged by intermediary organizations that offer expertise, information and help to support and motivate employers participating in WBL. Intermediary bodies can relieve employers from the administrative burdens that are often associated with different forms of WBL provision and assist them in locating information, for example advice on tax incentives to train young people.” (European Commission, 2013, 14)

Guiding questions:

- Are the key processes to run a dual VET system clearly regulated and enforced?
- Does the contract with the apprentice meet the minimum requirements (status as learner, training allowance, minimum duration, rights and obligations) to qualify the apprenticeship as a way towards a qualified vocation?
- How are both apprentices and companies supported when facing challenges during the apprenticeship?

2.8. Conducting quality development

VET programs constitute a promise for both the graduates and their potential employers. This promise asserts that the graduate of the VET program has acquired the competences necessary to accomplish relevant work processes in the vocation on a qualified level. In order to fulfil this promise, the VET program itself must be of a high quality. Thus, quality standards aim to ensure that apprentices are able to successfully complete their VET program and maintain or increase the acceptance of VET among employers by documenting a high level of competence. The standards also offer companies a degree of transparency about what they can expect from graduates of the VET program.

Basically, quality development on the program level can be arranged on two different levels: (1) Design of the VET program; (2) Implementation of the VET program.

Quality principles in the design of VET programs can be codified in the regulatory framework. Among others, they comprise standards introducing minimum requirements on the curriculum, procedures and scope of examinations, rights and duties of the parties to an apprenticeship contract, suitability of learning venues and VET personnel. As the quality of a VET program is fundamentally determined by the specialized knowledge and teaching skills of the teaching and training personnel, a requirement concerning the competences of the VET personnel should be regulated explicitly. For example, in Germany, as well as in Switzerland, there are specific skill requirements for teachers in schools and for training personnel in companies. In order to teach at a vocational school, teachers must usually hold a relevant university degree, while trainers in companies must hold a certificate of suitability. There are thus codified standards in place that seek to ensure that VET is provided at a high pedagogical level.

The implementation of the VET program is carried out on the level of learning venues. In school-based VET programs, schools are primarily in charge of putting the various regulations of the curriculum into practice. The ministry has to make sure that respective quality development processes are implemented in schools. In dual VET programs, the quality of those parts of the program offered in learning venues other than schools are to be considered additionally. It has also to be decided which body formally monitors that quality standards are being implemented.

One major distinction to be clarified is between the notion of ‘quality control’ and ‘quality development (QD)’. ‘Quality control’ follows the philosophy of production systems which strive for a ‘zero error tolerance’. Accordingly, the major purpose is to identify errors and deficient products in order to eliminate them. It is quite obvious that this philosophy makes sense when high risk processes (e. g. running of an airplane) or consumer products are involved. Educational processes can only be partially compared with these examples. Given the complexity and uniqueness of the social interaction between teachers and learners in VET programs, a philosophy of ‘quality development’ seems to be more appropriate. Here the respective institutions involved (VET schools, companies, intermediary bodies such as chambers, etc.) implement a system of continuous improvement. Respective QD systems install processes of data collection, data analyses and measures of improvement on a regular basis. They start from the assumption that they will probably never become perfect but that they can always become better.

Guiding questions:

- What quality standards are to be codified in the regulatory framework?
- What agency is responsible for the monitoring and implementation of the quality standards?
- How are quality development processes designed and implemented on the level of the institutions taking responsibility in the operation of VET programs?

2.9. Attracting employers to VET

“Work-based learning can only exist in a country if companies buy into this concept and offer apprenticeship places, student placements or cooperate with schools. Stimulating the creation of apprenticeships and placements is a key challenge in many European countries that wish to upscale their Work-Based Learning practices within initial VET.” (European Commission, 2013, 13) The commitment of companies in adequate numbers and quality is an indispensable core dimension of a sustained and functioning dual VET system. However, this is only the case when companies are to expect benefits (Bliem et al., 2014, 68). Accordingly, two questions are to be addressed:

- (1) How can companies (especially SMEs)/employers be attracted to actively support the advancement of the VET system?
- (2) What role can companies/employers take in the development and operation of VET programs?

(1)

Companies may pursue different objectives when becoming involved with VET. Bliem et al. (2013, 75) see the following potential motives:

- Production motive: Puts the productive performance of the apprentices in the forefront. Through their contribution to business success, the costs of VET should already be covered during the training period.
- Investment motive: The objective of VET is to qualify future employees to meet company requirements and to thus become independent from the external labor market.
- Screening motive: The screening motive sees VET as an extended probation period. The companies can observe and test their new employees for a longer period and then select the ones that best fit the company’s requirement profile. Because long-term employment of trainees is sought, the screening motive can also be viewed as an investment motive.
- Reputation motive: With the reputation motive, the company hopes to garner a higher reputation amongst customers, suppliers and other business partners through the training, as well as amongst high performing skilled workers in the external labor market, and to achieve an improvement in its market situation on this basis.
- Social responsibility: In addition to commercial economic motives, there are always also companies who see giving young people the opportunity to enter the labor market and at the same time to secure the requirement for skilled workers in the region and in the industry as a social responsibility.

In any case, engagement in VET requires perceivable benefits and value creation for the company. The expected cost-benefit ratio during the training is an important deciding factor for offering training opportunities in the company whereby the benefit cannot be quantified only through the productive output. Empirical studies offer some key factors which can be taken as possible advantages for committing oneself to VET (European Commission, 2013; Dustmann & Schönberg, 2012):

- Positive impact on supply of qualified labor
- Closing skills gaps through tailor made VET
- Positive effect on recruitment and retention
- Improved productivity and performance
- Positive effects on employed staff development
- Positive effects on innovation
- Reduced costs for recruitment and orientation of new employees
- Lower risks of wrong selections

One serious challenge in this area is “poaching”. Poaching covers the possible head-hunting of trained skilled workers: “The poaching firm can satisfy its skill demand without own training investments and the poached firm might lose (part of) its training investments. Poaching therefore can lead to an underinvestment in training because firms are hesitant to pay for the acquisition of skills for workers that leave before the training investments are paid-off.” (Mohrenweiser et al., 2010, 2) One possible strategy to prevent poaching is the introduction of models of collective financing participation: “All employers who stand to benefit from skills developed by apprentice firms contribute to a common fund from which the expenses of those who provide training are reimbursed, in whole or part, thereby re-balancing incentives from recruitment towards training.” (ILO, 2012, 9)

(2)

Companies can take part in different ways in the development and operation of VET programs. To mention just a few:

- Supply of opportunities for work-based learning within a dual VET program.
- Assuming responsibility for specific projects or modules organized within school-based VET programs.
- Resourcing of modern technical equipment for schools.
- Provision of personnel for projects at VET schools.
- Provision of internships for VET teachers.
- Participation in the processing of exams.
- Participation in the governance of VET schools.
- Participation in the development of curricula and quality standards for VET programs.

Guiding questions:

- How can companies (especially SMEs) be attracted to give active support to the advancement of the VET system?
- What motives and what arguments may convincingly address the willingness of companies to engage in dual VET programs?
- How can ‘poaching’ be prevented?
- What part can companies take in the development and operation of VET programs?

2.10. Promoting VET attractiveness to school leavers

VET is met with differing degrees of social acceptance in different countries. In general, it can be said that the acceptance of VET in countries with a high level of dual VET is higher than in those countries in which dual VET does not exist at all or only exists to a very limited degree. At one end of the spectrum are Germany and Switzerland, and at the other end are the countries with no distinct VET system (e.g. USA, Canada, Japan) or countries with a predominantly school-based VET system (e.g. Italy, Spain, England, Australia) (Euler, 2013, 33f.). Whereas in countries with a high level of acceptance VET is seen as a worthwhile alternative to school-based training courses, in countries where the opposite is true it is regarded as a pathway for those young people who are not able to pursue further schooling.

For example, in Germany around 25% of apprentices are eligible to enter university but instead take up an apprenticeship. Contrary to this, in many Asian countries VET is still perceived as not being as valuable as general education. “China and South Korea, for example, with their strong Confucian cultural heritage think of blue-collar workers such as technicians and laborers as lower-class and somehow despised by the general population.” (Ratnata, 2013, 2) So, the first option for parents is to send their children to university. Many of them fail and then take up their second choice option which is one of the (mostly school-based) VET programs.

In countries of limited acceptance, there is the risk of a self-reinforcing downward trend: there are no stakeholders with political power; the political decision-makers see no need to promote VET since there is no lobby pressure; and VET is neglected, causing its acceptance to decrease further. In view of the above, the challenge for countries with a high level of acceptance is to maintain this high level, whereas countries with a low level of acceptance need to break out of the self-reinforcing downward spiral.

How can the attractiveness of VET be promoted? In general, the answers seem to be obvious: VET has to meet the expectations and motives of those leaving compulsory schooling. The key motives that guide school leavers in their career decisions are a satisfactory salary, a safe job, good working conditions and prospects of promotion in the job (Baethge et al., 2014, 23ff). So what could make choosing a VET program attractive as opposed to an academic program?

When young people are making the decision between these options, VET seems to be fighting on its last legs. In many cases, university graduates manage to snap up the better jobs after gaining an academic degree. But not everyone who goes to university will succeed. Failure and dropout rates are high in most countries, so it may be worth reflecting on alternatives to academic studies.

Reflections on the risks of academic studies have to be accompanied by convincing arguments for starting a VET program. What arguments could possibly convince school leavers at the juncture of either continuing general education at university or entering a VET program to go for the second option? The following points may be taken into consideration:

- Work-based learning may be a way of learning which for many is more attractive than learning theory at school. “To the students, work-based training is authentic, it is for real. What you do have are consequences, not only to yourself but to others. The students in VET prefer work over school. At work they are treated as adults and they develop not only skills but an identity through their work. The student is part of the company and carries out ‘real’ tasks – not simulation or case studies. They get to know the demands on a person within their trade: what kind of qualifications should he have? What are the working conditions? What is the work culture?” (Cort, 2008, 6)
- Earning money even during the VET period can also be an important point for many young people.
- Prospects of getting a well-paid job after VET could also be a valid point. In particular, this is the case if the competences are close to the companies’ needs. Apprentices come into direct contact with companies. “Apprenticeships in particular are often related to positive early employment outcomes: a relatively large proportion of apprentices are taken on by the company where they have been trained.” (Bartell, cited in ETF, 2013b, 21) This is also confirmed in a study published by Hanushek, Woessmann and Zhang (2011), which shows that VET qualifications may well make it easier for young people to gain access to the employment system in the short term than with general school leaving certificates, although in the long term (i.e. over a person’s working life) general school leaving certificates increase the likelihood of employment at an advanced age and, in many countries, lead to a higher level of income.

- Models reversing the succession of VET and academic studies can also result in starting with the VET program. Apprentices who excel in VET programs can continue to the higher education level, very much like participants of general education. This requires a high degree of permeability or interlinking between VET and academic programs.
- An indispensable condition for many of these points is a high-quality VET program. If the resulting competences of the program are neither usable for the company nor the graduate, the VET program will be regarded as time serving.

Guiding questions:

- How can school leavers be attracted to enter the VET system after compulsory schooling?
- What motives and arguments may convincingly address the interest of young people in joining dual VET programs?
- Who is to be in the driver-seat for improving the reputation of VET as opposed to general education?

3. DESCRIPTIVE ANALYSIS

In this chapter, the essential components of a modern dual VET system introduced in the previous chapter serve as a framework for analyzing the current VET system in Serbia. In particular, the guiding questions are taken up and linked with available data on the Serbian VET system. The analysis results in a description of how the existing system performs with regard to these essential components of a modern dual VET system. Furthermore, achievements and major challenges are identified as a basis for subsequent recommendations in the following chapters.

3.1. Main characteristics of the Serbian VET system

Before drawing on the 10 essential components set out in chapter 2, the current Serbian VET system and its main characteristics will be introduced. In the past decade, Serbia made considerable progress in defining its strategic vision and legal regulation for the education system in general and the VET system in particular. Major intentions and provisions are stipulated in the Law on Secondary Education (LSE, 2013) and the Strategy for Education Development in Serbia 2020 (MoE, 2012a) with corresponding action plans. The strategy includes all areas of education, but devotes an extended chapter to secondary VET (MoE, 2012a, 97ff.). The action plan for the implementation of the strategy contains specified activities (actions), developed methods of implementation, timelines, key activity implementers and activity leaders, as well as instruments for monitoring progress and progress indicators, and the procedures of reporting and evaluating the effects of envisaged strategic measures. Although many elements of both the strategy and action plan have already been introduced in previous documents (Government, 2006a; Government, 2006b), the current intentions for advancing the Serbian VET system are well documented. However, the actual implementation of the measures and priorities resulting in real changes in the current situation is still challenging.

The following chart provides an overview of the different levels of the Serbian education system:

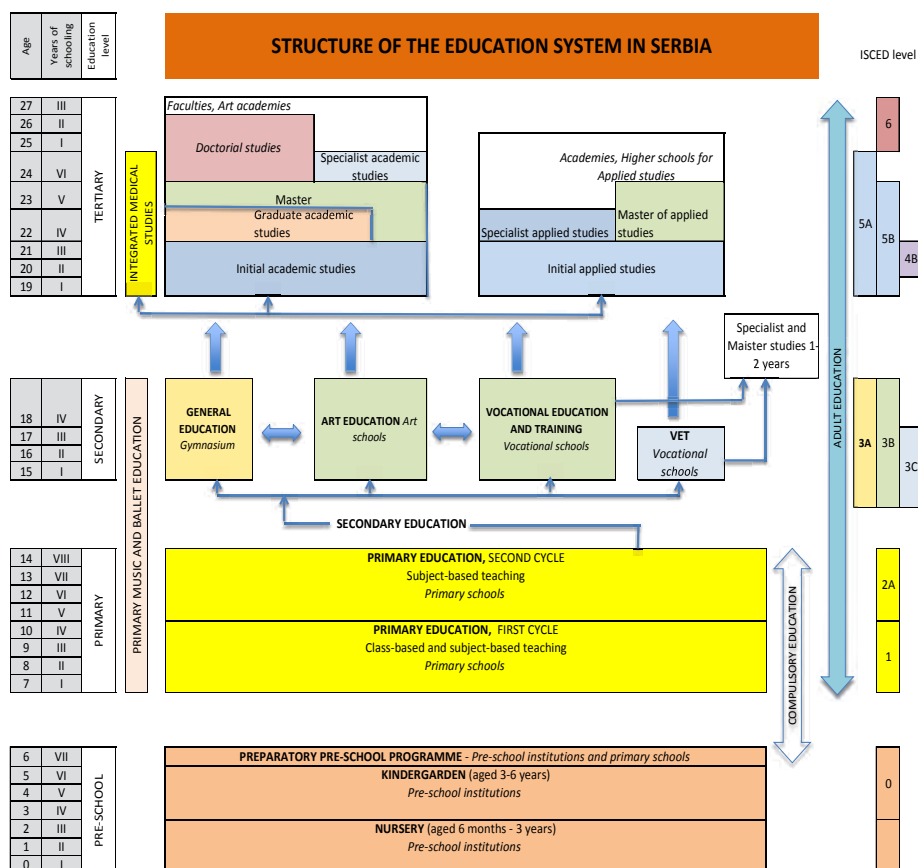


Figure: Overview of the education system in Serbia

Data on the transition of students from primary to secondary education clearly prove the high importance of VET in the Serbian education system. The continuation rate from primary to secondary education has stood at about 92% (2012/13; ETF, 2015, 22). After eight years of compulsory primary education, secondary education consists of the general stream, with 23% of students spending four years at a general education school (gymnasia), and the VET stream with 75% of students in secondary vocational schools (in four- and three-year vocational profiles). Two percent of the students in secondary education are in art schools. If the strategic objectives are achieved then by 2020 at least 95% of those who completed primary school (88% of the total population of that age) will enroll in a secondary school. Four-year vocational schools will enroll 39% of children, other secondary vocational schools will enroll 10% of children, while grammar and artistic secondary schools will enroll 39% of children (MoE, 2012a, 21). As a consequence, this may well result in an increase of general secondary education and a decrease in the number of students in three-year VET schools.

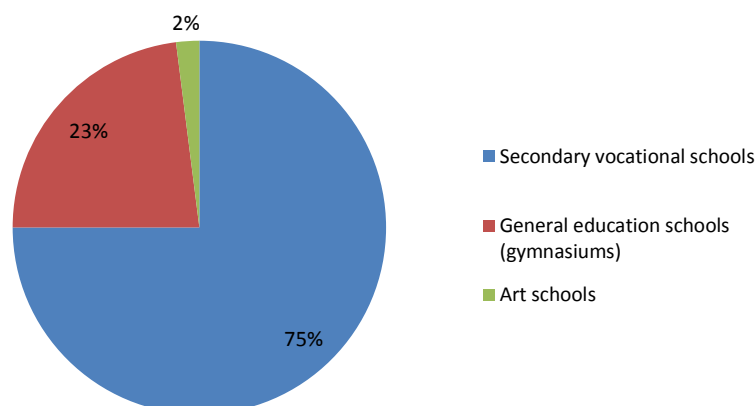


Figure: Overall share of pupils in secondary education, 2013/14 school year (ETF, 2015, 8)

About 16% of young people aged 15-18 leave school early or drop out of secondary education. These young people then have no formally recognized qualifications (ETF, 2013a, 17). Dropout rates are much higher in three-year than in four-year education (ETF, 2015, 31).

The various VET programs are offered by an extensive network of around 350 secondary vocational schools, some of which are private (ETF, 2013a, 8; data from 2010/11). VET programs represent different occupational profiles. In 2013/14 some 166 of these profiles were offered in four-year programs, 121 were offered in three-year programs. The 287 different occupational profiles can be grouped into 15 sectors. More than half of students are enrolled in one of the following five sectors:

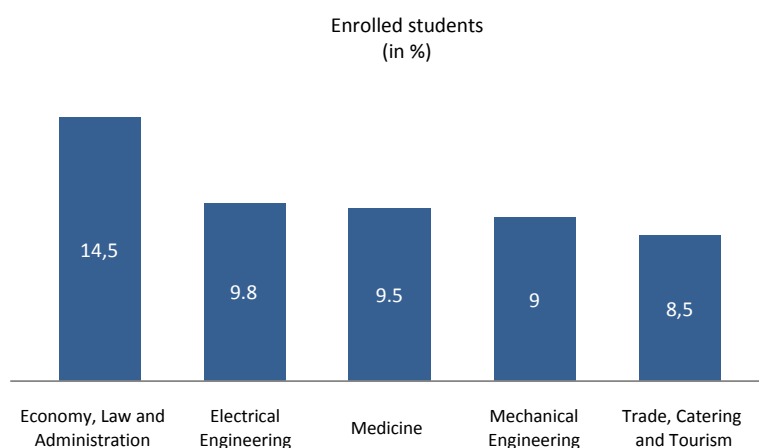


Figure: Most commonly chosen sectors for secondary vocational education (ETF, 2015, 6)

In previous years, a growing number of so-called pilot (or experimental) profiles have been established. The learning in these classes is based on modern curricula and equipment, a smaller number of students in classes, the definition of qualification standards and the ambition of a higher degree of student-centered teaching practices (MoE, 2012a, 101). In the meantime, 51 profiles have been moved from pilot to regular status. Furthermore, four more are in the process of adopting the curriculum, eight are in the process of

evaluation and six are at the stage of monitoring of which five are in private schools (information from Ministry of Education). Fifty-eight percent of vocational schools have had at least one pilot class, with coverage of about 15% of the students in the system (ETF, 2013a, 8; data from 2009/10). It is reported that about 70% of the students from the pilot classes could start a job within three months after graduation (Unesco, 2011, 20; data refer to 2008).

Students complete secondary education by passing a final exam in three-year education and a '*Matura*' in four-year education as part of the graduation process (ETF, 2015, 8). Four-year programs (general or vocational) entitle graduates to take up academic studies at university.

Apart from these characteristics, some further issues deserve mentioning as they indicate the relevant framing conditions for any reform of the Serbian VET system:

- The current Law on Secondary Education (LSE) primarily regulates VET in secondary schools. There are no provisions so far addressing VET in other learning sites.
- The youth unemployment rate (defined as the share of the labor force aged 15-24 without work but available for and seeking employment) in Serbia is one of the highest in Europe. In 2014, it reached a level of about 49% (World Bank, 2015).
- The demographics' impact on the VET population of the shrinking number of young people results in a decline of 22% by 2017, compared to 2007 levels (ETF, 2013a, 9). On the one hand, this reduces the overall potential for the VET of qualified labor needed in a growing economy. On the other hand, it might alleviate the pressing problem of youth unemployment and gives leeway and a broader scope to improve the quality of existing VET provisions.
- Social exclusions as well as deepening regional disparities are major challenges for advancing the VET system.
- Secondary school teachers are trained at universities. Prospective school teachers must spend one year of teaching practice under the supervision of a mentor (Unesco, 2011, 20). Secondary school teachers have 20 hours of theoretical teaching or 24-26 hours of practical teaching. "The lack of financing and poor working conditions, the insufficient number of teaching materials and aids, and the increasing number of students (particularly refugees and low-income students), have undermined the morale of teachers" (Unesco, 2011, 21).
- Teaching methods as well as teachers' knowledge on their subject matter in vocational schools are reported to be "relatively poor" (ETF, 2013a, 36). Some 80% of all schools in Serbia are equipped with a broadband internet connection (ETF, 2015, 32).
- Although it is difficult to define the needs of the labor market precisely, there is a strong perception that the current VET system does not meet these requirements. Some blame the current structure of VET for being a generator of (youth) unemployment (MoE, 2012a, 103), some put it into more moderate terms and see a need to increase the relevance of VET. Others point out that the enrollment plan in vocational schools does not follow labor market needs (MoE, 2012a, 99). "Regardless of the great demand for certain qualifications such as bricklayers, welders, moulders, primary school graduates have not been interested in these professions for many years. On the other hand, enrollment policy does not comply with the unemployment situation (highest enrollment rate is in the fields of Economics, Law and Administration with only a four-year education, but a very similar number of the unemployed are from this group seeking first-time employment opportunities)". (MoE, 2012a, 101)

The descriptions reveal the high importance of VET in the Serbian education system. The overwhelming majority of graduates from primary schools continue with secondary education. Exact figures for the different pathways from primary education into the labor market are only partly available, and comparing the figure sometimes is difficult as they relate to different years. Nevertheless, the overall picture given by the available data provides a good reference point for spotting the main concerns and challenges in the system.

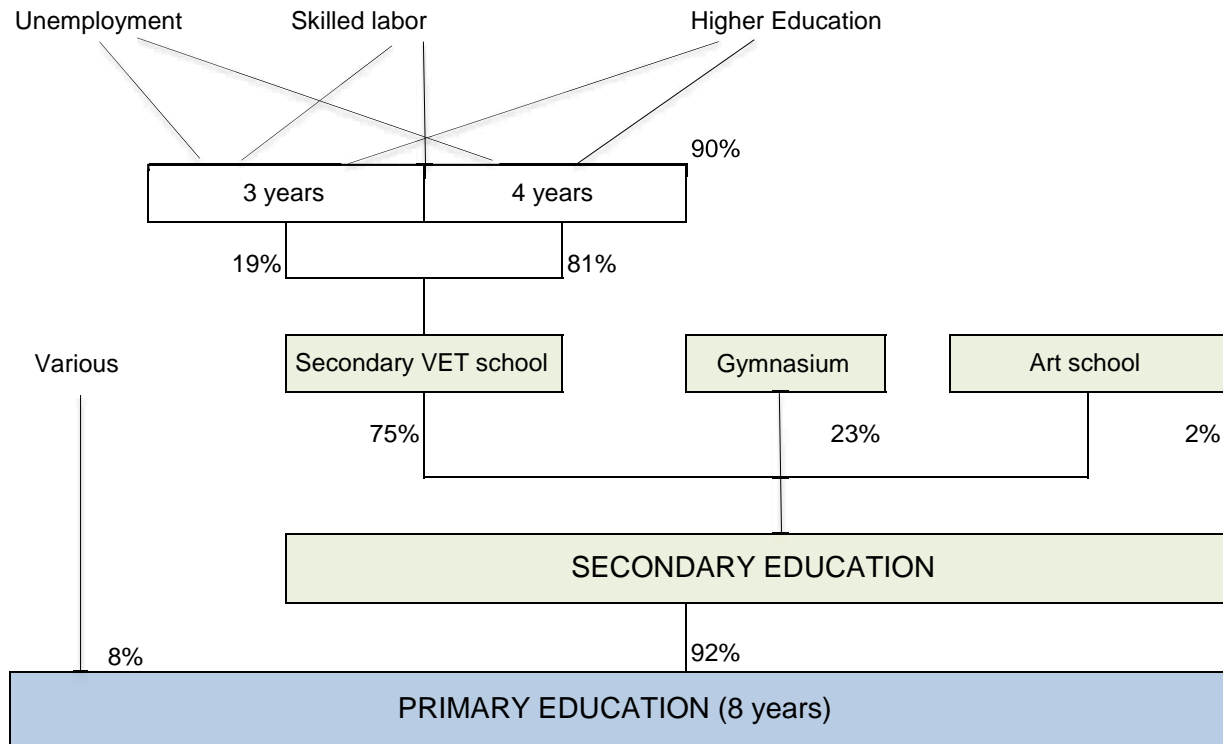


Figure: Transition routes in the Serbian education system

The above chart helps to identify the areas of concern on the system level. The first one relates to those not entering any of the three strands aimed at the acquisition of a formal grade in secondary education. There are different reasons for students not continuing their education after compulsory schooling and partly they are Roma children, and partly children from poor households and families not able to pay the costs of travel to school, etc. At the other end of the social stratum, some children continue their education abroad or continue schooling in private secondary education. Also, some children end up in unskilled labor or help out with work in the household, enter the grey economy, get married at young age, etc. Others enter one of the VET offerings outlined above in this sub-chapter.

A second concern relates to those graduating from a secondary VET school and then not being able to enter the labor market and find satisfying employment. More than 90% of those finishing four-year VET opt for further education. Of those finishing three-year VET, many try to find employment but due to the tight job market they fail and then continue with further education offerings. This reveals one of the weaknesses in the transition from school to work: The resources of the education system (here especially in the secondary and tertiary sector) are to a considerable degree stressed because students do not find alternatives in the labor market. For many students, schooling on the different levels is less an opportunity allowing them to satisfy their needs and thirst for education, but more a waiting room which remains an adequate 'second-best option'.

The achievements and challenges in the architecture of the overall VET system in Serbia can be summarized as follows:

Achievements:

- Target-group specific offerings at vocational schools.
- Pathways from VET into academic and professional studies.
- Modernized occupational profiles established in about 15% of classes at vocational schools; graduates with good employment prospects.

Challenges:

- Transition from primary to secondary education not successful for a considerable number of school leavers.

- Social exclusion and regional disparities are significant.
- Dropout rate at secondary VET schools (esp. in three-year programs).
- Lack of students in occupations in the less attractive sectors.
- Transition to the labor market difficult for graduates from secondary VET; high youth unemployment rate.
- Working conditions of teachers (at least partly) are perceived as poor.

3.2. Defining strategic objectives for the (future) VET system

It is self-evident that any reform of a VET system requires a clear direction in terms of strategic objectives. Are there any for the Serbian VET system? What major areas do they focus on? What requirements and target groups do they have in particular? To what extent are economic, societal and individual objectives addressed and prioritized?

Relevant statements on strategic objectives are primarily available in the Law on Secondary Education (LSE, 2013) and the Strategy for Education Development in Serbia 2020 (MoE, 2012a). The Strategy was adopted in October 2012 by the Government of Serbia. It sets out key objectives for the medium-term development of the education system, including VET.

The Law on Secondary Education provides a comprehensive set of objectives for schools offering secondary education programs. Article 2 stipulates the following goals:

- a) development of key competences necessary for further education and the active role of citizens for life in contemporary society;
- b) development of key competences necessary for successful employment;
- c) training of students to independently make decisions on selection of profession and further education;
- d) awareness of the importance of one's health and safety, including safety and health at work;
- e) training of students for problem solving, communication and team work;
- f) respecting racial, national, cultural, linguistic, religion, gender, sex and age equality, tolerance and respecting differences;
- g) development of motivation for learning, training for independent learning, self-initiative, ability to self-evaluate and express one's opinion.

Some of the objectives are quite general and can be regarded as directions for the personal development of students (especially d, e, f and g). Others are explicitly linked to the promotion of employability (especially b and c), whereas at least one of the goals (namely a) addresses a societal dimension.

In the section on secondary VET, the Strategy for Education Development in Serbia 2020 comprises similar reference points but puts greater emphasis on the economic dimension. "The *mission* of the secondary vocational education and training ... is to provide every individual with the opportunities and conditions to acquire knowledge, skills, abilities and attitudes – professional competences for effective integration into the world of labor or further education. In order to achieve these tasks, the VET should be a functional, effective, rational and flexible system of education, widely determined and accessible to all, and capable of responding to the current and future labor market needs and preparing the individual for constant improvement and learning. ... The *functions* of the VET are: 1) the acquisition of initial and continuous professional education; 2) the acquisition of knowledge necessary to continue education; 3) the acquisition of qualifications (that is, relevant professional competences) which are recognised and necessary for the participation in the world of labour and which provide employment or starting one's own business; 4) preparing the individual for the life-long learning process; 5) development of creativity, innovation and entrepreneurship of individuals." (MoE, 2012a, 97)

The quotes clearly show that all three potential dimensions of a VET system – economic, societal and individual objectives – are addressed. With regard to the *economic dimension*, particular attention is given to the link between VET and the labor market. Starting from the assumption that "compliance between the VET offer and the labor market demand is at a low level" (MoE, 2012a, 101), the relevance of VET programs are to be improved. Without challenging this argument altogether, the discussion in this area needs further consideration. Although the high rate of (youth) unemployment is definitely alarming, a mono-causal link

between the current offerings of VET programs and the demand for qualifications on the labor market seems to be more complex. There are at least three possible explanations for the high rate of youth unemployment:

- Lack of jobs in a suffering economy which disproportionately affects the younger age cohort on the labor market
- Partial mismatch between supply and demand of qualifications (e.g. too many white collar, not enough blue collar workers)
- Outdated curricula and ineffective learning methodology in VET programs which result in graduates not being ready for qualified jobs in companies.

The crucial questions to be addressed are the following: Given that graduates of a VET program acquire competences reaching beyond the narrow requirements of specific companies, when is an occupational profile regarded as *relevant* for the labor market? Is it only if the competences outlined in the profile meet the current needs of a specific company or the average company in the economic sector? Or is it more important to prepare graduates for future needs and developments, promoting their ability to learn as opposed to make them familiar with technical skills which will be outdated in short time? In any case, the engaged and active participation of representatives from companies and the economic sectors in defining, assessing and updating VET curricula seems to be advisable.

With regard to the *societal dimension*, social integration in society is elaborated in many facets. In general terms, this is expressed in the Law on Secondary Education. In particular, this dimension is addressed with regard to vulnerable groups and their access to and achievement in education. A related, problematic issue is the deepening disparities between the regions in Serbia. “There is a need to develop well-targeted, multi-dimensional and locally-designed approaches to tackle interconnected problems in disadvantaged regions, such as out-migration resulting in depopulation and population ageing, a diminishing economic base with limited employment opportunities, low income levels and dependence on social welfare and poor infrastructures and quality of education.” (ETF, 2015, 2)

In the Strategy for Education Development in Serbia 2020, the *individual dimension* of personal development is less emphasized than in the Law on Secondary Education and in previous strategy documents (Government, 2006a, 12f.). In some cases, statements with a connotation to personal development are linked with those promoting the employability of VET graduates.

In summary, an analysis of the relevant documents reveals that there is elaborated coverage of strategic objectives in the economic, societal and individual dimension. Although there is no explicit prioritization, a strong emphasis is put on the adjustment of human capital in Serbia with the needs of the labor market and the development of innovation capacities in order to enhance the competitiveness of the Serbian economy. Apart from these qualitative objectives, some quantitative ones are also outlined in the strategy document:

- “Coverage – it is expected that at least 95% of primary school graduates will choose to go to a secondary school (88% of the age group). Four year secondary vocational schools are attended by 39% of the age group, other VET are attended by 10% of the age group, while more than 5% of the unemployed adult population attend some forms of VET. ...
- Effectiveness – in 2020, a minimum of 95% of students will have completed four-year secondary vocational schools (37% of the age group); 40%–50% of those who have completed four-year secondary vocational schools enroll at universities (15%–18.5% of the age group) and the remaining youths actively seek employment, while 20% of adults who have completed the training system will find employment or will be self-employed in less than 9 months. 20% of adults will complete continuous VET, including persons who have returned to the VET after leaving education system too early and those who have experienced long-term unemployment (training, additional training and retraining) in order to acquire their first qualifications or additional qualifications.” (MoE, 2012a, 98)

Achievements:

- Elaborated, comprehensive, ambitious and well-documented coverage of strategic objectives in the economic, societal and individual dimension.
- Experience and support provided by various projects, social partners and donors.

Challenges:

- Need to transcend the area of VET schools and integrate stakeholders from the economy more

explicitly, obligatory and bindingly.

- Identifying the supporters and resisters of implementing the various strategic objectives.
- Need for clarification: When is an occupational profile regarded as *relevant* for the labor market?

3.3. Anchoring the dual principle in the VET programs

As pointed out in chapter 2.2, work-based learning is an indispensable component of any dual VET, although not necessarily organized within the framework of a 'dual system' along the lines of the German, Swiss or Austrian VET system. Effective and sustainable learning in VET requires an alternation of theory and practice, reflection and action. Both components are equally important. School-based knowledge has to be applied in solving practical problems; experiences in practice have to be reflected in order to transform cursory impressions into knowledge and competences. Furthermore, it has been emphasized that it is not enough just to organize any practical experiences within a VET program but those which are of some quality and which are conducive to learning are required.

As the Serbian VET programs so far are basically school-based, the key question is to what extent practical experiences and work-based learning are anchored in existing VET programs. How is the alternation of theory and practice organized? What learning venues are involved in running a VET program? How can the practical part of the VET program provide learning experiences which are genuine, authentic and conducive to learning? How good are the learning venues at tapping into the full potential of practical and/or theoretical learning?

The Law on Secondary Education allows for the integration of work-based learning but remains quite general in defining the specific terms. Article 30 of the law stipulates: "The school shall implement practical teaching and professional practice in cooperation with companies, institutions, other organization or other legal entity. The manner of implementation of practical instruction from paragraph 1 of this Article and other issues related to implementation of practical instruction shall be defined by the Minister. ... The time, manner of and conditions for implementation of practical instruction and professional practice shall be defined by agreement." So how are the provisions of the law implemented in practice?

Practical learning is supposed to be part of many VET programs. "VET curricula are implemented through subjects, modules, practical teaching and professional practice, of varying durations in the course of a school year. The LoFE (Law on the Foundations of the Education System) outlines a 30:65 balance between general and vocational subjects in three-year VET profiles and a 40:55 balance in four-year profiles. Practical learning forms an integral part of the curricula and syllabuses of all educational profiles with the actual volume of practical learning based on standards for specific qualifications adopted in line with each sector." (ETF, 2015, 29) The number of hours allocated to general subjects (e.g. math, reading, science) and to practical instruction varies and depends on the occupational profile.

In both the law and the VET curricula, it remains open to what extent and to what quality practical instruction is implemented and what learning venues are involved in these processes. Although there are good practices of integrating companies, in many cases practical instruction is provided within VET schools. In the first instance, this is not alarming – as long as the experiences provided are of a sufficient quality (in terms of simulated work-processes, use of modern equipment and technology, expertise of the instructors, etc.).

As regards the quality of work-based learning, there seems to be a high heterogeneity, irrespective of the learning venue. Probably the most advanced examples of work-based learning are implemented in the pilot profiles.

The strong emphasis in the strategic documents on increasing the relevance of VET programs at least indicates that there is considerable room for improvement. The concern expressed in these documents is that VET programs need to be shifted closer to practice.

The overall impression with regard to anchoring the dual principle in the VET programs is that company-based practice is very limited in most VET programs. "Work practice offers the most immediate opportunity for the meeting of school students and employers, but practical teaching and practice is often performed inappropriately, such that it does not produce the expected results in terms of skills adoption and competency development. It could therefore be concluded that there is an unresolved issue of quality assurance on practical teaching outside the school, accredited work places and instructors for the delivery of working practice do not exist. ... Unfortunately, the changes needed for more efficient organization and

implementation of the work-based learning options have yet to be implemented.” (ETF, 2015, 28)

Achievements:

- Dual principle is anchored in the Law on Secondary Education in general terms.
- VET curricula assign lessons to practical teaching and professional practice.

Challenges:

- It remains open to what extent and to what quality practical instruction is implemented in the VET programs.
- Company-based practice is limited in most VET programs.
- A shared understanding of the quality of practical instruction as part of the VET programs is missing.

3.4. Investigating the demand for (future) qualifications and competences

How can VET curricula be developed to meet future demand of the labor market? Which stakeholders are to participate in the development and updating of VET programs? – These are the key questions in the context of curriculum development.

In Serbia, ‘occupational profiles’ provide the curricular framework for the VET programs. There are 166 profiles for the four-year programs and 121 for the three-year programs. The approach of framing the VET curricula within (more or less broader) profiles is well-taken, although the current number of profiles needs further consideration. “The current structure is still characterised by a high number of over-specialised and out-dated profiles, which correspond neither to the state of technological advancement, nor to the needs of modern businesses, which require individuals who are highly adaptable, equipped not only with technical but also with soft skills (communication skills, problem-solving, team work and self-discipline) and are capable of performing routine tasks, as well as solving unexpected problems” (ETF, 2013, 11). Rather than developing a specific profile for a narrowly defined occupation, related occupations could be clustered into ‘occupational families’ and organized with basic modules for all and special modules for qualification needs in specific areas.

Especially for the non-pilot profiles there seems to be a double mismatch problem: Occupational profiles attractive to primary school leavers only partially correspond with the demand on the labor market, whereas some occupations with visible demand in the economy cannot attract a sufficient numbers of young people. In the first case, occupational profiles are not or are only partially relevant, in the second case, they are not sufficiently attractive to those leaving primary school. While the attractiveness of VET is addressed in chapter 3.11, the fit between labor market demand and the competences set out in the VET curricula will be discussed in this chapter. The underlying challenge to be tackled is how to define the future qualification demand on the labor market.

As a starting point, one should refrain from believing that there is anything such as objective knowledge of the future demand of the labor market. Given the experiences from countries with elaborated VET systems, two factors contribute to a reasonable assessment of future qualification demand:

- First, research on both short- and medium-term labor market developments and the expressed needs in the various economic sectors could provide a solid foundation and some relevant data.
- Second, involving the relevant actors from the education and the economic sector in the respective decision-making and implementation processes would both utilize existing expertise and promote acceptance for the development of VET curricula.

To what extent is such an approach already in operation in Serbia? To cut a long story short: There are good foundations but still no coherent concept.

For example, the Strategy for Education Development in Serbia 2020 draws a link with the industrial development strategy and suggests VET development priorities in the following areas: information and communication technologies, food production and processing, traffic, and energy and energy efficiency (MoE, 2012a, 115). More specifically, the Chamber of Commerce and Industry of Serbia conducted a survey and came up with a list of occupations which could be discussed as potential priority candidates for the development of dual VET curricula:

- Agriculture: winegrower, winemaker
- Food industry: butcher, baker, pastry-chefs and confectionery makers
- Catering: waiter, cook
- Mechanical, metal and electrical industry: installer, construction machinery handler, mechatronician, welder, etc.
- Wood industry: wood processing operator, carpenter
- Construction: armature builder, builder, joiner
- Textile industry: textiles worker, dressmaker, tailor, designer

In both cases, it remains open to which extent these priorities are based on rigorous research. Thus, the data basis and the relevant information certainly can be improved. Here, existing bodies such as the Chamber of Commerce and Industry in the economic sphere and institutes such as the Institute for Improvement of Education (IIE) or the Institute for Education Quality and Evaluation (IEQE) in the educational sphere could take on additional tasks and responsibilities. At the same time, it could be checked if there is expertise in the universities in Serbia which could be tapped.

As to the second factor, a network of VET experts could be organized and facilitated, addressing the question outlined at the beginning of this sub-chapter: How can VET curricula be developed to meet the future demand of the labor market in the various occupations? Again, some foundations are already available. There are bodies like the Chamber of Commerce and Industry which could serve as a catalyst for promoting these challenging tasks. In any case, there should be an actor serving as a facilitator, catalyst and enabler of future-oriented curriculum development.

On a more detailed level, particular focus should be placed on defining VET curricula in a modern way. For example, so far little attention has been paid to key competences. Many VET curricula structure knowledge and learning content rather than define the competences suitable to solve practical, real world problems. "The curricula for secondary schools have been developed on long-outdated principles following a pyramidal structure that moves from general subjects in the first year to more vocational subjects in the final years." (ETF, 2015, 29) Again, there are good practices available (e.g. among the pilot profiles), but these 'lighthouses' should radiate into more occupational areas.

Achievements:

- There are some foundations in the defining of priorities for the development of new VET curricula.
- There are bodies which might take on the responsibility to facilitate systematic and coherent processes of future-oriented development of VET curricula.

Challenges:

- Consider the (high) number of occupational profiles and look at how relevant profiles could be clustered into 'occupational families'. They could be phrased in modern language, increasing their attractiveness to young people.
- Tasks and responsibilities should be defined and assigned to appropriate actors/bodies in charge of facilitating a future-oriented development of VET curricula.

3.5. Designing flexible curricula

In addition to being relevant, curricula also need to be flexible. This is due to the fact that they have to serve the qualification demand of a heterogeneous group of different employers and companies. There is no 'one-size-fits-all approach' and the challenge is to find a good balance between standardization and flexibility.

One possible approach is the combination of a compulsory, standardized basis with elective, flexible options within a modularized framework. The Law on Secondary Education explicitly allows for the implementation of this approach. In Article 6 it stipulates: "The curricula shall be adopted in accordance with defined principles, goals and standards of achievement, i.e. standards of qualification. ...

The curricula shall also contain modules, where module represents a set of theoretical and practical program materials and forms of work functionally and thematically connected within one or more curricular subject." (LSE, 2013) Further to that, in Article 11 the law lists the necessary components of a curriculum and under

point 3 includes “compulsory and elective subjects and modules based on educational profiles and grades”.

As already mentioned in previous sub-chapters, a considerable number of occupational profiles were modernized and tested as so-called pilot profiles (most of which have been transferred into the regular system). Most of these pilot profiles were been competence-based, outcome-oriented and modularized. Among others, evaluations of the pilot show there was increased attendance and higher average marks for students. About 86% of school representatives evaluate the pilot profile as being much better than the traditional one (IIE, 2009).

Achievements:

- There is a workable foundation in the law for developing flexible curricula serving the heterogeneous requirements of different employers and companies.

Challenges:

- Transfer of good practices with modularized approaches into the regular development of future VET curricula.

3.6. Leading partnership network between government and relevant stakeholders

In school-based VET systems such as the Serbian one, very often the governance is highly centralized and managed top-down. Modern education systems, especially in the realm of VET, heavily depend on the active commitment and participation of different stakeholders. That is why a top-down-model often lacks effectiveness and persuasiveness. The following quote illustrates the relevance of this insight for the Serbian context: “Even though the Strategy correlates closely to other national strategies (e.g. economy and employment), there are concerns that the vision behind the Strategy has not been sufficiently shared among all stakeholders (especially among employers, teachers, students and parents) two years on from adoption.” (ETF, 2015, 2) So one major principle in designing governance structures relates to involve and mobilize all relevant stakeholders who can participate in the reform of the VET system. Besides the ministries, these are the representatives from the economic and the education system with expertise in the issues under development.

This leads to the core questions already outlined in chapter 2.5:

- Which relevant stakeholders are part of a partnership network taking care for the running, advancement and continuous modernization of the VET system?
- What are the key processes to be organized to make the VET system run efficiently? What roles do the stakeholders take in the key processes and how are the respective responsibilities shared? What role and responsibilities do government bodies take in the partnership network?
- Who is in charge of catalyzing the processes to keep the VET system up to date?

The vision for the VET calls for an “optimized network of secondary vocational schools and educational institutions, whose work is based on social partnership ...” (MoE, 2012a, 97). On the level of the strategic objectives this claim becomes more detailed: “Establishing a sustainable system of social partnership in VET in Serbia”, especially by “involving employers in the programming, development and implementation of VET” (MoE, 2012, 105). Strengthening the participation of social partners in VET can be pursued on different levels. At the local level this could mean the cooperation and networking among vocational schools, local employers, companies, national services and professional associations. At the national level, the governance of VET involves three key institutions (ETF, 2015, 33; ETF, 2013, 11f.):

- Ministry of Education, Science and Technological Development (MoESTD)
- National Education Council (NEC)
- Council for Vocational Education and Adult Education (CVEAE).

Although the MoESTD is the primary responsible for education, other ministries are involved as well, such as the Ministry of Finance (financing), the Ministry of Youth and Sports (grants and scholarships for disadvantaged students), and the Ministry of Labor. “Cooperation between the ministries is not firmly institutionalized, meaning that some cross-sector issues are not addressed in a timely or appropriate manner.” (ETF, 2015, 34) Among others, the MoESTD is in charge of: research, planning, inspection and development of secondary education; participation in the development, equipping and maintenance of

facilities; professional evaluation and inspection of skills upgrade of staff at education establishments. Regional School Administrations (RSAs) are involved in monitoring and evaluation of the schools (including VET schools), coordination of in-service training of teachers, controlling of financial management in schools; and other issues. In organizational terms, RSAs are part of the MoESTD.

The NEC is responsible for the overall development and improvement of education. All general subjects in VET are under the responsibility of the NEC. Among others, it determines development directions and participates in the creation of the education development strategy, establishes standards prescribed by the law, adopts curricula and programs, as well as the final exam program, recommends the approval of textbooks, and gives opinion concerning the laws and other regulations governing education. The NEC is a huge body with more than 40 members. It can take autonomous decisions.

The CVEAE was set up by the Government in May 2010. It has 21 members, including representatives of the Serbian Chamber of Commerce and Industry, craftspeople, employers' association, vocational education experts, representatives of labor, employment and social policy institutions, VET schoolteachers and members of representative trade unions. The CVEAE aims to ensure the development of a VET system by connecting education and the world of work and participating in the development and governance of the vocational education and adult education system in line with labor market needs and expectations. The CVEAE is also responsible for the VET part of the curriculum, although it does not have the authority to take decisions.

In addition to these institutions, the Institute for Improvement of Education (IIE) and the VET Centre as an organizational unit within the IIE as well as the Institute for Education Quality and Evaluation (IEQE) also contribute to defining educational standards, evaluating learning outcomes and to the development of final exams.

There is one further body in the governance structure, namely the sectorial involvement of Sector Skills Councils (SSC). A couple of SSCs have been established on a pilot basis in order to involve the industry in such areas as curriculum development on the national level or final exams on the school level. Experiences from the piloting has shown that the membership of the SSCs is broad, consisting of company representatives, as well as other members including from higher education, trade unions, relevant ministries and school associations. It is apparent that at an early stage there were a number of problems, including: how SSCs are formed, the scope of their work, the expertise of Committee members, and different technical, financial and organizational issues. After the piloting phase, and without appropriate resources for SSC sustainability, the established SSCs are no longer fully functional. The establishment of new SSCs is announced for September 2015.

At first glance, this multitude of institutions looks quite impressive. However, there are some critical remarks to be considered for the further advancement of the institutional governance framework. "There is... a lack of coordination between ministries in general, and the present level of social dialogue for policy design should be increased encouraging more intensive engagement on the part of employers. There is also a need for strengthening of capacities at local level in order to establish fully functional Social and Economic Councils." (ETF, 2015, 16) The assessment concludes with the following priority: "establishment and implementation of effective mechanisms for coordination and cooperation between all stakeholders" (ETF, 2015, 32).

The CVEAE is a good example of a body representing all VET stakeholders. However, in contrast to the NEC it has no decision-making power. Furthermore, NEC and CVEAE have overlapping tasks which sometimes results in some tension. Whereas the CVEAE represents the interests of the professions and takes the economic perspective, the NEC primarily represents the interests of general education and takes the perspective of the schools. However, some of the interview partners in the appraisal mission recommend a clearer division of responsibilities and/or mechanisms for conflict resolution.

Given the multitude of bodies and stakeholders, three directions for further improvement can be highlighted:

- The link between the key processes necessary to run an efficient VET system (process dimension in chapter 2.5) and the responsibility of the various bodies and stakeholders should be spelled out more explicitly. Occurring overlapping should either be removed or complemented by rules for coordination and conflict resolution.
- The active integration of companies and employers still needs fresh ideas and further efforts. Presumably, approaches and areas of involvement with regard to the key processes differ between occupations and economic sectors. Promising areas are definition of occupational requirements and standards, establishment of occupational standards, development of future-oriented curricula,

supply of work-based learning places, closer cooperation with vocational schools, participation in the conduct of exams.

- The establishment of a coordination body convening relevant stakeholders in order to create a nurturing ground for planning and implementation of reform activities. “An obstacle ... is the absence of coordination and coherence in the strategic management of vocational education, which creates numerous problems and consequences that directly hamper the development of vocational education, or dilute the effects of the already achieved or initiated strategic innovations and reform activities.” (MoE, 2012a, 103; see also p. 115)

Achievements:

- Bodies such as the CVEAE provide a good foundation to establish governance involving major stakeholders for the sake of the advancement of the VET system.

Challenges:

- Responsibility and tasks of the various bodies and stakeholder should be defined more explicitly and clearly. In that context, a clear distinction between areas of consultation and (involvement in) decision-making should be drawn.
- The commitment and expertise of representatives from companies should be secured to a higher degree.
- A coordination body should be established to strengthen the authority and voice of VET in the minds of public, as well as to support the planning and implementation of reform activities.

3.7. Ensuring sustainable financing

Giving the chronic scarcity of public funds, financing of education is a permanent topic of public debate. With regard to VET, the core questions are: Who is to contribute to the financing of the VET system? What contributions can be expected from companies and employers benefitting from the outcomes? What kind of financing system should be introduced in the medium and long run?

Public secondary education in Serbia is funded from three main sources: central government funding, funding by local municipalities and own income of secondary education schools. The vast majority of all secondary education institutions are public and education is therefore mostly funded through public sources (central government and local municipalities). Central government funds are allocated for staff salaries from the central budget, while the maintenance costs for school buildings, as well as for teaching materials and equipment and the professional development of teachers, is funded by the local governments. “The current division of power in steering the secondary education system, however, shows several discrepancies between decentralized decision making and the centralized funding system. The lack of assessment procedures for the fiscal impact of curriculum changes seems to be the most prominent problem.” (ETF, 2015, 36)

Investment in education in Serbia is below the level of most EU countries (ETF, 2015, 36). Therefore it is hardly surprising, that the Strategy for Education Development in Serbia 2020 states that there is “insufficient funding of and investments in equipping schools” (MoE, 2012a, 103). As one of the implications from this underinvestment, practical instruction at vocational schools has to be run with equipment which is (at least partly) not up to the standards relevant in practice.

Apart from regular financing, there have been a number of donor-driven reform activities, mainly by the EU and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Several projects wholly or partly related to VET were completed within the Instrument for Pre-accession Assistance (IPA) budget period of 2007–13, including: Modernization of the VET System in Serbia – IPA 2007; Quality Assurance within the Examination System in Primary and Secondary Education – IPA 2008, and; Second Chance – Development of Functional Elementary Education of Adults in Serbia – IPA 2008. Further modernization of VET is proposed within IPA 2012, along with better equipment for practical work in vocational schools. This EUR 3.8 million project was initiated in April 2014 (ETF, 2015, 10). Although these projects can create fresh impetus in specific areas, both in terms of scope and the financial volume, they cannot compensate for any shortcomings in the overall system of VET financing.

In terms of cost categories, primarily it is personnel costs for teachers and the costs for equipment and material in schools that are incurred. So far, there is no remuneration of students. Profiles supported by

GIZ through the cooperative model have introduced remuneration for students on a small scale within a scholarship model.

There are some issues in the context of the financing system which need further consideration:

- Following an established enrollment system, funding of secondary schools is primarily supply-driven. Although Article 35 of the Law on Secondary Education stipulates: “When determining the number of students, the school in cooperation with representatives of organizations in charge of labor activities, must take into account the need of the economy and possibilities of continued education of future students”, the existing capacity of vocational schools has a strong impact on the type of VET programs and occupational profiles offered. Models which have taken the demand of the labor market into account have been outlined (Government, 2006a, 29f.; MoE, 2012a, 210ff.) but they need further discussion and conceptualization.
- Contribution of employers to the financing of VET, be it individually by investing in work-based learning offerings or within the framework of a levy system, does not seem to be appropriate given the current state of the Serbian economy. This is understandable, although the introduction of a dual VET system cannot exclude this issue in the long run.

Achievements:

- Donor support providing extra resources resulting in project modelling and the guiding of future reforms.

Challenges:

- VET financing highly depends on public funding. Therefore, shortcomings in public spending very quickly have an impact on the quality of VET programs.
- Need to conceptualize and implement a comprehensive VET financing system to involve all those who benefit from the outcomes of VET programs.

3.8. Implementing lean administration and enforcement processes

The key processes for running the VET programs should be clearly regulated and enforced. As the current VET system in Serbia is school-based, all the administrative procedures of schooling apply. If a dual VET system was launched, new administrative requirements would have to be designed and enforced. In chapter 2.7, four main processes were distinguished: Admitting candidates for starting an apprenticeship; organizing exams and awarding certificates; approving companies to train apprentices; stipulating a contractual basis for the apprenticeship. Apart from these processes, supports for both the companies and apprentices would have to be organized in order to get the system running smoothly. Special attention should be devoted to SMEs, meaning that the processes should be lean, effective and supportive.

One open issue to be decided on concerns the status of the young person. Will he or she be regarded as a student, an apprentice, or a trainee? What rights and duties is he or she expected to receive and assume?

Along with the new tasks, the question of who is going to be in charge of them also has to be decided and regulated. In countries such as Germany, Switzerland or Austria, intermediary bodies close to the companies such as chambers or employers' associations are tasked with taking on some of the responsibilities.

Challenges:

- Decide on the status, rights and duties of the main actors (in particular the young people, companies, vocational schools) in a VET program.
- Define, regulate and enforce the key processes of a dual VET program.
- Adjust the regulatory framework accordingly, including work-based learning phases in companies.
- Define the tasks and responsibilities of the key stakeholders (e.g. ministries, chamber) in the dual VET program.

3.9. Conducting quality development

Irrespective of the type of VET system (school-based or dual), there is a considerable internal quality variance within each system. In terms of quality development, this may have two implications. First, one could regulate *minimum* standards which every VET program within a system would have to meet. Second, one could introduce quality development processes aiming at the continuous improvement of any program. Whatever the orientation, a couple of questions need to be answered:

- What is the object of quality development which has to be regulated in the form of quality standards? Chapter 2.8 suggests some potential areas for which quality standards could be agreed on in VET (e.g. curriculum, exams, suitability of learning venues and VET personnel).
- Who is responsible for the implementation and monitoring of regulated quality standards?
- How are the processes of quality development designed and implemented in the learning venues in charge of the operation of VET programs?

The Law on Secondary Education contains some provisions relating to the “evaluation of the quality of work of the school” in Article 90: “Evaluation of the quality of work of the school is performed as self-evaluation and external evaluation of quality. Self-evaluation and external evaluation are implemented in accordance with the law. On the basis of results of evaluation of the quality of work, the school shall make the plan for improvement of the quality of work in areas defined by quality standards for the work of institution. The plan for improvement of the quality of work is an integral part of development plan of the school.” Apart from this procedural provision, the objects of quality development are not specified. However, other articles provide some implicit references with an impact on VET quality. For example, Article 11 stipulates the components of the curriculum (e.g. goals, name, type, duration of the program) and within that context defines the requirements any complete curriculum must meet.

The “Strategy for Education Development in Serbia 2020” (MoE, 2012a) devotes a number of paragraphs to the quality of both the VET system and VET programs. One of the four major areas of strategic objectives is explicitly related to quality and sets out different objects of quality development: “...it is expected that all elements for achieving high-quality of the VET should be functioning (Sector Councils are already established and operating in their second term, the National Qualifications System is developed and regularly updated based on the needs of the economy and society as a whole; all curricula are developed according to the qualification standards or achievement standards for general subjects; standards for teachers and principals as well as for institutions are in full force; external final vocational and graduation exams will be implemented, as well as exams for other forms of VET, etc.; the dropout rate in VET – reduced by 50%)” (MoE, 2012a, 98; also see p. 104f for strategic measures and the establishment of a system of monitoring and evaluation of VET). Both the Law on Secondary Education and the Strategy introduce programmatic statements. How distant is reality from these expectations? What issues need further consideration in the implementation process? What gaps have to be filled?

One step forward in putting general objectives into more concrete terms is the introduction of quality indicators as suggested by the National Education Council (NEC), some of them with relevance for VET. “A national quality assurance framework has been established for all formal institutions, including the VET school system, allowing for both self-assessment and external assessment. External assessment is conducted by the Institute for Education Quality and Evaluation (IEQE) and MoESTD educational advisors using standardised procedures and tools to monitor elements such as teaching performance. The VET Centre and the IEQE recently developed a proposal of additional standards for VET schools and adult education providers based on the European Quality Assurance Reference Framework for VET which will be included in the National quality assurance framework after approval and adoption by the CVEAE and the MoESTD. School inspection is organised at local level, controls the fulfilment of prescribed norms for VET curricula implementation, such as equipment and teacher qualification.” (ETF, 2015, 25)

Additional momentum for the advancement of quality development can be derived from the introduction of the National Qualification Framework (NQF). A NQF is an instrument for the classification of educational programs (including VET programs) according to a set of criteria or criteria for levels of learning outcomes achieved. The set of criteria can be made explicit in terms of a set of level descriptors (e.g. skills, knowledge, personal competence, social competence). The scope of the NQF may be confined to a particular sector (e.g. VET, secondary education) or inclusive of all sectors in the education system. For the Serbian education system, it remains to be seen what impact the introduction of the NQF can trigger for the quality development of the VET system.

While quality development standards and processes for VET schools are at least to some degree in progress, quality development outside the VET schools (e.g. practical work, work-based learning in companies) remains an open issue. If VET programs are to be made dual, the quality of work places and instructors need further consideration (ETF, 2013b, 36; ETF, 2014, 35ff.). Furthermore, the implementation and enforcement of quality development with regard to learning venues outside the VET schools must be addressed. One potential candidate for taking responsibility in this area would be the Chamber of Commerce and Industry, although it has to be clarified to what extent the Chamber is able to independently follow up critical cases and incidences if one of their member companies is concerned.

Achievements:

- Clear expectations in the Law on Secondary Education on VET schools to set up processes of continuous evaluation and quality development.
- Clear expectations to define quality standards for some major components of the VET system.

Challenges:

- Quality development in VET schools is still in its infancy. There is a need to conceptualize and continue existing programmatic ambitions and first experiences in implementation.
- Quality development in the context of work-based learning urgently needs a conceptual framework and an agency concerning itself with implementation and enforcement.

3.10. Attracting employers to VET

Without attracting companies and employers to take responsibility in the design and implementation of VET programs, any realization of a dual VET system is impossible. This is clearly reflected in the Strategy for Development of Secondary VET: “The state of the economy has a critical influence on the implementation of the set objectives in the Strategy for Development of Secondary Vocational Education. A number of measures envisaged in the Strategy for Development of Secondary Vocational Education rely on the cooperation and support of employers and the economy as a whole – the greatest threat to the implementation of proposed activities will be the inability of the economy to become engaged in the planned activities as it will be preoccupied with its own problems.” (MoE, 2012a, 114) Thus, attracting employers to VET, encouraging them to offer places for apprenticeships, internships and other forms of work-based learning (WBL) is the key challenge for putting dual VET programs into practice. The availability of such places is sensitive to economic cycles, and employers will not always be interested in investing time and resources in WBL. Experiences from various countries show that a strong WBL culture requires the presence of powerful employer and business organizations, the involvement of trade unions, and the familiarity of all parties with the WBL system.

There are two major questions to be addressed:

- How can companies/employers (especially SMEs) be attracted to support the advancement of the VET system? What arguments could convince them to participate? What benefits could they expect from their commitment?
- What kind of participation is most beneficial for both themselves and the promotion of the VET system?

Current participation of companies/employers in the Serbian VET system is rudimentary. On the local level, there are some good practices, but overall employers’ involvement in VET programs is not widespread. There is no fine tradition of companies participating in the design and implementation of VET programs. On the contrary, the provision of VET programs is – like all educational programs – regarded to be the responsibility of the state. The attitude occasionally culminates into complaints on the part of the employers that graduates from VET schools do not meet labor market requirements. This may be true, more or less, but a constructive next step then could be for employers to take responsibility in the design and implementation of curricula or the provision of work experiences for the VET teachers and students.

The Strategy for Education Development in Serbia clearly addresses these issues. One of the strategic objectives is: “Establishing a sustainable system of social partnership in VET in Serbia,” accompanied by strategic measures such as: “Involving employers in the programming, development and implementation of VET” (MoE, 2012a, 105). The Action Plans then elaborate on these objectives and measures by putting forward instruments and detailed activities. The following instruments are suggested: “By-laws on certification of

employers for practical training. Initiating and drafting a proposal concerning the stimulation of employers to implement practical training.” (MoE, 2012b) There are three major activities to be followed: “Develop a system of accreditation and certification of employers who are implementing practical training. Launch initiatives for the adoption of laws and by-laws regulating financial incentives for employers whose companies implement practical training. Include at least 10% of employers in the work of sector council, examination commissions and in the implementation of practical training.” (MoE, 2012b) The measures should then result in the increased relevance of VET programs, better implementation of practical training and greater readiness of students who have completed VET programs for practical work.

To sum up, the instruments and measures outlined in the documents follow a four-point approach:

- Designing ways to attract employers for providing WBL in their companies.
- Finding ways to get employers involved in the governance and implementation of a dual VET system within a system of social partnership.
- Providing incentives for employers to launch their participation.
- Introducing a formal mechanism to safeguard the quality of practical training.

Although the measures suggested all sound reasonable, they are still too general for the initiation of tangible initiatives. The following considerations are meant to drive the ideas a step further. At least, there are three more aspects to be taken into account.

First of all, initiatives have to start from the assumption that employers and companies differ in terms of their commitment to support the advancement of VET. So it is important to take the line of least resistance and organize a critical mass of supporters with those sectors and companies in the economy most accessible:

- Pioneer firms (including international companies) with recruitment problems for qualified workforce may be easier to motivate to become partners in quality dual VET.
- Bigger firms (e.g. retail chains) running informal training schemes may be receptive to building upon existing practice and move it into a more formal framework.
- Economic sectors with strong associations interested in recruiting a high-quality workforce may also find an approach of social partnership attractive.
- State-owned companies could also be approached to lead the way towards a dual VET system in their sector.

Second, the status of the learner in the dual VET system has to be clarified. Will there be formal apprenticeships (which is the greatest possible extent), will the learners gain the status of an employee (which then results in an informal apprenticeship), or will they be engaged in a VET program as a student or a trainee?

Third, employers and companies need to be convinced that any involvement in VET programs is to their benefit. Therefore, an inventory of arguments, like the ones listed in chapter 2.9, needs to be prepared and customized to the respective context (see also ETF, 2014, 15). Particular attention should be drawn on the ‘poaching problem’ (see chapter 2.9). Specific regulations may be useful for avoiding disadvantages for those employers investing and participating in VET programs who then fear that competitors will poach the trained workforce with the offer of higher salaries.

What kind of participation is most beneficial for both the companies and the promotion of the VET system? Although the kind and degree of involvement on the part of a company often takes advantage of given opportunities and circumstances, highest priority should be put on the following areas of participation:

- Providing opportunities for work-based learning.
- Providing access to modern technological equipment for learners and teachers.
- Participating in processes of curriculum development.

Achievements:

- Some good practices of employers’ involvement in VET programs.

Challenges:

- Attracting employers and companies for the broad promotion of VET.

- Identifying first movers and an early majority of companies committed to provide opportunities for work-based learning and access to modern technological equipment.
- Getting companies and employers systematically involved in processes of curriculum development.
- Introducing formal mechanism to safeguard the quality of practical training.

3.11. Promoting VET attractiveness to school leavers

After compulsory schooling, many young people (and their parents) strive to be admitted to one of the academic programs in higher education, whereas VET is just regarded as a second choice. As pointed out in chapter 2.10, this behavior is quite rational as a degree from university opens up the most options on the labor market. Therefore, promoting the attractiveness of VET to school leavers is not just a matter of designing nice-looking marketing material – it also depends on factors beyond the reach of the VET system.

At first glance, in Serbia the acceptance of VET programs seems to be satisfactory. Seventy-five percent of those entering secondary education join a three- or four-year VET program in a secondary VET school. However, of those graduating from these programs, a very high proportion continues their education. At this point, definitive explanations for this are difficult to provide: Are the VET programs too poor in quality that they do not prepare graduates for adequate jobs? Or is the labor market not able to absorb qualified graduates due to the weak economy? Or do secondary school graduates find job offerings after secondary school unattractive, making them decide to continue education in order to improve their job prospects at a later stage?

Even if direct interventions for promoting VET attractiveness are limited, some approaches can be considered:

- First, convincing arguments for joining a VET program can be presented, especially with regard to *dual* VET programs that include a strong work-based learning component (see chapter 2.10).
- Second, the quality of the VET program can contribute to the acceptance or even reputation of VET. If apprentices gain the impression that they learn relevant competences for (working) life, can contribute authentically to real work processes and are appreciated as members of a community in a school and company, this most likely triggers motivation and interest for the VET program.
- Third, there have to be attractive options on the labor market after graduating from the VET program. If it makes a difference for subsequent employment whether a VET program has successfully been passed, for many young people spending time in such a program is worth the effort and provides more than just a means to gain access to further or higher education afterwards.

Achievements:

- There are some good arguments to convince primary school graduates to join a VET program.

Challenges:

- Provide showcases of good practices demonstrating that there are (1) high quality VET offerings; (2) attractive opportunities once a VET program has successfully been passed.
- Make arguments for choosing the VET route after compulsory schooling broadly available, especially in primary schools when pupils are struggle with making a decision on what to do after leaving primary school.
- Design attractive pathways starting with high quality dual VET programs and ending with attractive prospects for satisfying employment after graduating from the VET program.
- Safeguard permeability into higher education, but make sure that the pathway from VET to higher education is only taken by those able and truly committed to academic studies.

4. MAJOR CHALLENGES

Based on the analysis in chapter 3, major challenges have been identified which need to be tackled in order to arrive at an effective dual VET system in Serbia. There are also some considerable achievements, improvements and redesigns that can be built on. The following table provides a summary of both the challenges and achievements highlighted in the analysis of the Serbian VET system:

| Components | Achievements | Challenges |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Architecture of the VET system | <ul style="list-style-type: none"> Target-group specific offerings at vocational schools. Pathways from VET into academic and professional studies. Modernized occupational profiles established in about 15% of classes at vocational schools; graduates with good employment prospects. | <ul style="list-style-type: none"> Transition from primary to secondary education not successful for a considerable number of school leavers. Social exclusion and regional disparities are significant. Dropout rate at secondary VET schools (esp. in three-year programs). Lack of students in occupations in the less attractive sectors. Transition to the labor market difficult for graduates from secondary VET; high youth unemployment rate. Working conditions of teachers (at least partly) are perceived as poor. |
| 1 Defining strategic objectives for the (future) VET system | <ul style="list-style-type: none"> Elaborated, comprehensive, ambitious and well-documented coverage of strategic objectives in the economic, societal and individual dimension. Experience and support provided by various projects, social partners and donors. | <ul style="list-style-type: none"> Need to transcend the area of VET schools and integrate stakeholders from the economy more explicitly, obligatory and bindingly. Identifying the supporters and resisters of implementing the various strategic objectives. Need for clarification: When is an occupational profile regarded as relevant for the labor market? |
| 2 Anchoring the dual principle in the VET programs | <ul style="list-style-type: none"> Dual principle is anchored in the Law on Secondary Education in general terms. VET curricula assign lessons to practical teaching and professional practice. | <ul style="list-style-type: none"> It remains open to what extent and to what quality practical instruction is implemented in the VET programs. Company-based practice is limited in most VET programs. A shared understanding of the quality of practical instruction as part of the VET programs is missing. |
| 3 Investigating the demand for (future) qualifications and competences | <ul style="list-style-type: none"> There are some foundations in the defining of priorities for the development of new VET curricula. There are bodies which might take on the responsibility to facilitate systematic and coherent processes of future-oriented development of VET curricula. | <ul style="list-style-type: none"> Consider the (high) number of occupational profiles and look at how relevant profiles could be clustered into 'occupational families'. They could be phrased in modern language, increasing their attractiveness to young people. Tasks and responsibilities should be defined and assigned to appropriate actors/bodies in charge of facilitating a future-oriented development of VET curricula. |
| 4 Designing flexible curricula | <ul style="list-style-type: none"> There is a workable foundation in the Law for developing flexible curricula serving the heterogenous requirements of different employers and companies. | <ul style="list-style-type: none"> Transfer of good practices with modularized approaches into the regular development of future VET curricula. |

| Components | Achievements | Challenges |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 Leading partnership network between government and relevant stakeholders | <ul style="list-style-type: none"> Bodies such as the CVEAE provide a good foundation to establish governance involving major stakeholders for the sake of the advancement of the VET system. | <ul style="list-style-type: none"> Responsibility and tasks of the various bodies and stakeholder should be defined more explicitly and clearly. In that context, a clear distinction between areas of consultation and (involvement in) decision-making should be drawn. The commitment and expertise of representatives from companies should be secured to a higher degree. A coordination body should be established to strengthen the authority and voice of VET in the minds of the public, as well as to support the planning and implementation of reform activities. |
| 6 Ensuring sustainable financing | <ul style="list-style-type: none"> Donor support providing extra resources resulting in project modelling and the guiding of future reforms. | <ul style="list-style-type: none"> VET financing highly depends on public funding. Therefore, shortcomings in public spending very quickly have an impact on the quality of VET programs. Need to conceptualize and implement a comprehensive VET financing system to involve all those who benefit from the outcomes of VET programs. |
| 7 Implementing lean administration and enforcement processes | | <ul style="list-style-type: none"> Decide on the status, rights and duties of the main actors (in particular the young people, companies, vocational schools) in a VET program. Define, regulate and enforce the key processes of a dual VET program. Adjust the regulatory framework accordingly, including work-based learning phases in companies. Define the tasks and responsibilities of the key stakeholders (e.g. ministries, chamber) in the dual VET program. |
| 8 Conducting quality development | <ul style="list-style-type: none"> Clear expectations in the Law on Secondary Education on VET schools to set up processes of continuous evaluation and quality development. Clear expectations to define quality standards for some major components of the VET system. | <ul style="list-style-type: none"> Quality development in VET schools is still in its infancy. There is a need to conceptualize and continue existing programmatic ambitions and first experiences in implementation. Quality development in the context of work-based learning urgently needs a conceptual framework and an agency concerning itself with implementation and enforcement. |
| 9 Attracting employers to VET | <ul style="list-style-type: none"> Some good practices of employers' involvement in VET programs. | <ul style="list-style-type: none"> Attracting employers and companies for the broad promotion of VET. Identifying first movers and an early majority of companies committed to provide opportunities for work-based learning and access to modern technological equipment. Getting companies and employers systematically involved in processes of curriculum development. Introducing formal mechanism to safeguard the quality of practical training. |

| Components | Achievements | Challenges |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 Promoting VET attractiveness to school leavers | <ul style="list-style-type: none"> There are some good arguments to convince primary school graduates to join a VET program. | <ul style="list-style-type: none"> Provide showcases of good practices demonstrating that there are (1) high quality VET offerings; (2) attractive opportunities once a VET program has successfully been passed. Make arguments for choosing the VET route after compulsory schooling broadly available, especially in primary schools when pupils are struggling with making a decision on what to do after leaving school. Design attractive pathways starting with high quality dual VET programs and ending with attractive prospects for satisfying employment after graduating from the VET program. Safeguard permeability into higher education, but make sure that the pathway from VET to higher education is only taken by those able and truly committed to academic studies. |

Table: Achievements and challenges of the Serbian VET system

5. ROADMAP FOR THE IMPLEMENTATION OF REFORM STEPS IN THE SERBIAN VET SYSTEM

5.1. Overview

One of the lessons learnt from the analysis of the current VET system in Serbia is that existing flaws are less due to a lack of strategic insights and more to a lack of efficient implementation. Therefore, a major next step is the development of an implementation strategy. How can the specific challenges analyzed in the previous chapters (see the summary in chapter 4) be tackled? Which options are available, which are desirable and which are feasible?

With most implementation issues, there is not just one best solution but a couple of options which have to be assessed within the context of the given circumstances. Therefore, in many cases this chapter puts forward different options but does not decide on the best one to take. Any reform process is a 'learning system'. It cannot be managed in a linear, deterministic way – it has to evolve in an iterative, reflective way.

As to the challenges to be tackled, there is an implicit hierarchy. Some have to be mastered first before moving on to the subsequent ones. As a result, the following sub-chapters are structured as follows:

- Taking basic decisions in respect of the (future) VET system (chapter 5.2).
 - Architecture of the VET system
 - Defining strategic objectives for the (future) VET system
 - Leading partnership network between government and relevant stakeholders
 - Ensuring sustainable financing
 - Attracting employers to VET
 - Promoting VET attractiveness to school leavers
- Designing dual VET programs (chapter 5.3).
 - Anchoring the dual principle in the VET programs
 - Investigating the demand for (future) qualifications and competences
 - Designing flexible curricula
 - Implementing lean administration and enforcement processes
 - Conducting quality development
- Adjusting legislation (chapter 5.4).

5.2. Taking basic decisions in respect of the (future) VET system

5.2.1. Architecture of the VET system

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Architecture of the VET system | <ul style="list-style-type: none"> Target-group specific offerings at vocational schools. Pathways from VET into academic and professional studies. Modernized occupational profiles established in about 15% of classes at vocational schools; graduates with good employment prospects. | <ul style="list-style-type: none"> Transition from primary to secondary education not successful for a considerable number of school leavers. Social exclusion and regional disparities are significant. Dropout rate at secondary VET schools (esp. in three-year programs). Lack of students in occupations in the less attractive sectors. Transition to the labor market difficult for graduates from secondary VET; high youth unemployment rate. Working conditions of teachers (at least partly) are perceived as poor. |

So far, there are three types of VET programs with different durations and designed for different target groups:

- Various offerings at vocational schools lasting two years or less meant for those who fail secondary school or for different reasons do not manage to enter secondary schools. There is also a limited number of profiles and places mostly offered to people with specific developmental disorders.
- Three-year VET programs for those with average or poor performance at primary school but who want to attain a vocational certificate.
- Four-year VET programs for those with good school performance who want to achieve a good starting position for either employment or for being admitted to academic studies at university.

The following figure illustrates the share of theoretical and practical competences in the different tracks:

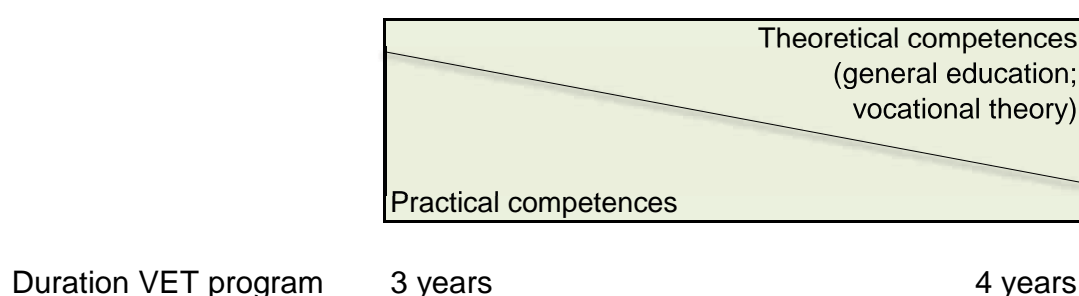


Figure: Share of theoretical and practical competences in different VET tracks

The key messages for reforming the three- and four-year programs can be summarized as follows: Three-year VET programs create opportunities for employment by a strong element of company-based, dual VET! Four-year programs are a pathway to employment in qualified professions in knowledge-intensive occupations as well as for entry into academic studies!

These messages are compatible with the strategic plan that aims to increase the number of students in three-year programs and to decrease the number of those graduating in four-year programs. The strategy also aims to see 40-50% of those who have completed four-year secondary vocational schools enroll in university

(15%–18.5% of the age group) and the remaining youths actively seek employment (MoE, 2012a, 98).

Given that the three-year VET programs lack a certain degree of attractiveness and the four-year programs are caught between two stools (it is supposed to neither prepare well for university nor for employment), it is suggested that more distinctive profiles for both types of secondary VET programs be worked out.

How can this be achieved for the *three-year program*? The following changes are suggested to sharpen the profile which subsequently increases the attractiveness for both companies and for primary school leavers:

- Ensure standardized, work-based learning processes in companies as a key component of the dual VET program.
Currently, practical learning is part of the curriculum in most three-year VET programs but it remains up to the vocational schools to decide how and to what extent this requirement is implemented. Very often, practical learning is not realized in companies but in workshops at the vocational school. In future three-year VET programs, work-based learning in companies is a key part of the program. It is devoted to imparting the major competences defined in the occupational profiles. Respective competences are clearly regulated in the curriculum, and there are standards for the companies which they have to meet in order to make the practical part of the program as conducive as possible to learning. The formal shell of work-based learning may vary but the involvement of companies is compulsory.
- The sequencing of company involvement should be agreed on under the given circumstances. There are different models on how the work-based learning part of the program can be implemented in terms of point in time and extent. For example, at the beginning of the program learners spend most of their time at a vocational school, acquire a first level of proficiency and then the focus shifts to learning in companies where they are already able to contribute to productive work processes (consecutive model). Or each week learners split their presence between some days at the vocational school and some in the company (integrative model).
- The reform of the three-year programs towards a dual approach should be implemented step-by-step. It should start with occupations in economic sectors where there is a high demand for qualified employees (see chapter 3.4) and/or where there are companies committed to providing the type of work place learning as outlined above.
- The duration of the VET program could be defined flexibly.
Instead of having a fixed duration of three years, a duration of between 2.5 and 3.5 years could be introduced in order to meet the heterogenous conditions of different learners and occupations. This could provide an incentive for good students to speed up their apprenticeship while it could also add time for the provision of additional support for those with social/learning disadvantages. Differentiation in learning processes is supposed to be a good precaution against dropout and individual impairments.

How can the profile of the *four-year VET programs* be strengthened? Currently some 45% is allotted to general education, and the remaining part to vocational theory and practical learning. Critics say that this is too much for promoting employability but not enough for preparing school graduates for university. Before suggesting new ways to profile the program, its function and purpose needs to be clarified. The following ideas start from the assumption that a four-year VET program is to educate participants for two purposes: (1) They should be able to successfully enter industrial fields offering access to qualified professions in knowledge- and theory-intensive sectors (e.g. business, engineering, IT). (2) They should enable graduates to gain admission to professional and academic studies in higher education. As the two entry points are different, the internal structure of the programs needs certain flexibility.

The following models are suggested as ways to redesign the existing four-year programs:

1. “Training by stages”

Following this model, the program has two stages with different shares of general education, vocational theory and practical learning. The basic structure looks as follows:

| | | | | | | |
|------------------------|-------------|-------|-------|---------------------|--------|----------------------------------------------------|
| Practical learning (%) | 20-40 | 20-40 | 20-40 | Professional Degree | 0 | Admission to professional / academic studies |
| Vocational theory (%) | 40-20 | 40-20 | 40-20 | | 40 | |
| General education (%) | 40 | 40 | 40 | | 60 | |
| | Years 1 - 3 | | | | Year 4 | |

The two stages have different foci. The first stage (years 1 to 3) prepares students to achieve the first goal set out above (access to qualified professions in knowledge and theory intensive sectors). The practical part should be carried out in companies and devoted to the acquisition of a standardized set of competences. The successful accomplishment of years 1 to 3 results in a professional degree issued by the vocational school. Only those who achieve a set grade are then entitled to continue into year 4, which to a large extent prepares the students for subsequent transition into higher education. At that stage, a further difference could be introduced by allowing graduates with an excellent degree not only to continue professional studies but also academic studies.

2. “Vocational

Gymnasium”

This model is for the transformation of the four-year VET program into a vocational type of ‘gymnasium’ (similar to the ‘Berufsgymnasium’ in Germany) or ‘academy’ (similar to the ‘HAK - Handelsakademie’ or ‘HTL - Höhere Technische Lehranstalten’ in Austria). Whereas the German ‘Berufsgymnasium’ is solely focused on the acquisition of the general or specific qualification for university entrance (‘Abitur’/‘Matura’), the Austrian ‘HAK / HTL’ takes five years and offers a double degree (general qualification for university entrance + vocational degree). In Austria most of the superior VET sectors (e.g. business, engineering, IT) pass the route via the HAK/HTL. Many HAK/HTL graduates continue their career in a company rather than moving on to academic studies. In the German as well as in the Austrian model, very little compulsory practical study in companies is involved.

3. “Fork

model”

The “fork model” has some similarities with “training by stages”, but also some distinctive differences. The first phase (1.5 to 2 years) is regarded as the foundation phase with three elements: general education (40%), vocational theory (40%) and practical learning (as an internship). On top of these well-known curricular components, there are two additional provisions: (1) Vocational schools provide a kind of ‘vocational coaching’ which enables the students to better identify their strengths and interests, but also the challenges and gaps on which they have to focus in order to achieve their identified goals. After the foundation phase students have a choice of three options: (1) They can continue the VET track which ultimately ends with a vocational degree. (2) If performance in the foundation phase justifies it, they can switch to professional and/or academic studies in higher education. The details of this would have to be defined. (3) They can combine a dual study with the continuation of the VET program, which ultimately results in a double degree. One major precondition for this track is the readiness of companies to offer respective provisions. In Germany, around 100,000 students are educated in such a ‘dual study’ track. For companies, this provides an excellent opportunity to recruit qualified staff with a competence profile much closer to the company’s needs than those of university graduates.

| | | |
|---------------------------------------------------------------------------------------------|--------------------|-------------------|
| Foundation phase: School based + internship + vocational coaching + trial study | Professional study | Bachelor degree |
| | | |
| | Dual Study + VET | Double degree |
| | | |
| | Dual VET | Vocational degree |
| Years 1-2 | | Years 3+ |

The recommendations can be summarized as follows:

Three-year VET programs:

- Key message: Three-year programs create opportunities for employment with a strong element of company-based, dual VET.
- Strengthen the importance and relevance of work-based learning by involving employers in the design and operation of the programs.
- Ensure standardized, work-based learning processes in companies as a key component of the dual VET program.
- Implement reform towards dual VET profiles step-by-step.
- Consider a flexible duration for this type of VET program.

Four-year VET programs:

- Key message: Four-year programs are a pathway to employment in qualified professions in knowledge-intensive occupations as well as to entry into academic studies.
- Consider different models providing flexible ways to serve the main purposes expressed in the key message: “Training by stages”; “vocational gymnasium”; “fork model”.

5.2.2. Defining strategic objectives for the (future) VET system

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Defining strategic objectives for the (future) VET system | <ul style="list-style-type: none"> • Elaborated, comprehensive, ambitious and well-documented coverage of strategic objectives in the economic, societal and individual dimension. • Experience and support provided by various projects, social partners and donors. | <ul style="list-style-type: none"> • Need to transcend the area of VET schools and integrate stakeholders from the economy more explicitly, obligatory and bindingly. • Identifying the supporters and resisters of implementing the various strategic objectives. • Need for clarification: When is an occupational profile regarded as relevant for the labor market? |

The Law on Secondary Education, as well as the strategic documents, provides an elaborated and well-documented coverage of the strategic objectives in the economic, societal and individual dimensions.

However, based on the assumption that the current VET system is primarily school-based, objectives for the company part in the dual VET system remain very general and programmatic (challenge 1). Any shift in a system inevitably requires change processes which could result in some benefitting and others losing out from the changes. In order to manage the changes towards a new dual VET system without destructive frictions, those who might possibly lose part of their current influence, power and resources need to be identified and offered an attractive perspective in the new system (challenge 2). One specific objective in the strategy documents is to improve the relevance of VET programs. Relevance can be understood in different ways, so there is a need for clarification (challenge 3). What options are there for tackling these challenges?

Challenge 1 – Elaborating steps for securing the participation of companies in the dual VET system

The switch from the current to a dual VET system (first of all in the three-year programs) will have to be implemented using an incremental approach. In order not to overburden the change process, the stages for arriving at the new system have to be spelled out from a strategic point of view. Which economic sectors and/or occupations are to be approached first, which follow in the next stages?

A strategy with a more precise definition of economic sectors/occupations should be agreed with the relevant stakeholders (e.g. employers' associations, unions). Correspondingly, it has to be clarified who is going to be in charge of the processes (e.g. a ministry, the Chamber of Commerce and Industry, a steering group involving different stakeholders). The process could be organized in different ways, for example:

- Approaching 'hot candidates' and/or those sectors already expressing interest in the establishment of a dual VET system in their area of responsibility.
- Public invitation to tender for project funding devoted to supporting the transformation process in specific economic sectors/occupations. Employers, trade or other professional associations representing the respective sector can apply. Response to the tender can then be used to launch a dialogue resulting in the definition of strategic priorities in the implementation of the dual VET system.

Challenge 2 – Anticipating resistance to change

Any shift from the current to a dual VET system can lead to resistance from two directions:

- From those who lose their current influence, power or resources (e.g. VET teachers fear losing their jobs; teacher unions fear losing their membership and political influence; members of existing bodies such as ministries, consulting or decision making councils fear losing some power).
- From those who do not find themselves prepared or willing to assume new responsibilities (e.g. companies which are expected to invest in VET; associations which are to take responsibility for the success of a reform).

Anticipation of resistance can be accompanied by arguments and proposals on how to placate or give concessions to those affected. While precise concepts have to be worked out, some examples may indicate the direction:

- Employed teachers will not be dismissed as the implementation process is stretched over a longer period.
- The new system requires new responsibilities (e.g. development of new curricula and exams, counseling and supporting companies) which offer new opportunities for challenging and influential jobs.
- Counseling and other offerings will be introduced to support those facing new challenges.

Challenge 3 – Clarifying the 'relevance' of VET programs

No one doubts that VET programs should be relevant. But what is it that makes a VET program relevant? The troublingly high rate of youth unemployment is not necessarily a reliable indicator that existing programs are irrelevant as this can also be due to a lack of jobs in a suffering economy. Employers may sometimes call the VET program irrelevant because graduates do not exactly match the qualifications they require a specific job they are offering. And if VET programs are to prepare people for a broad range of jobs within an occupational profile, the fit can by definition not be a 100% perfect.

Therefore, 'relevance' is a matter of definition and agreement between those who are in charge of defining the occupational profiles. There may be good reasons for evaluating many of the existing profiles as inadequate (e.g. they lack exposure to practice or rely too much on theoretical knowledge). But there is no ultimate definition of a 'relevant' occupational profile but the need to team up the right people and let them define and decide on the necessary competences that make up an acceptable profile.

The recommendations can be summarized as follows:

- Confirm the strategic foundation of the VET system with its comprehensive coverage of economic, societal and individual objectives.
- Launch a process aimed at defining priorities in terms of economic sectors/occupations to be transformed into dual VET programs.

- Anticipate resistances to change and design counteractive measures.
- Agree on a definition of which characteristics make a VET program 'relevant'.

5.2.3. Leading partnership network between government and relevant stakeholders

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 Leading partnership network between government and relevant stakeholders | <ul style="list-style-type: none"> • Bodies such as the CVEAE provide a good foundation to establish governance involving major stakeholders for the sake of the advancement of the VET system. | <ul style="list-style-type: none"> • Responsibility and tasks of the various bodies and stakeholder should be defined more explicitly and clearly. In that context, a clear distinction between areas of consultation and (involvement in) decision-making should be drawn. • The commitment and expertise of representatives from companies should be secured to a higher degree. • A coordination body should be established to strengthen the authority and voice of VET in minds of the public, as well as to support the planning and implementation of reform activities. |

Once the revised program architecture and the corresponding strategic objectives are clear, an adequate governance structure is needed as the institutional pillar for implementation. Current governance reflects the strong focus on conducting the VET programs primarily in vocational schools. An incremental transformation of the programs into a dual structure requires consultative and decision-making bodies, including the company part of VET.

Basically, there are four areas to be considered when implementing the respective changes:

- How can vocational schools be prepared for their role in a dual VET system?
- What rights and duties can be assigned to companies in a dual VET system?
- What role can the Chamber of Commerce and Industry play in running a dual VET system?
- What coordination and decision-making bodies are to be arranged for launching and operating the dual VET system?

Role of vocational schools in a dual VET system

In terms of innovation, vocational schools represent a great variety of approaches from re-active adjustment to pro-active creation. In assessing schools' potential for innovation, one has to take into account that many of them are currently suffering from a lack of resources to tackle existing challenges.

Discussion of the profile of schools ready to tackle future challenges is a complex issue as it touches on a broad range of political, financial and cultural dimensions. Given this complexity, at this stage it is not possible to go into detail but some exemplary principles to be recognized in further discussions can be pointed out:

- Schools need some degree of autonomy to be innovative and responsive to changes in their environment.
- There are good practices and instructive experiences from which many schools can learn. Sharing these practices requires appropriate settings which have to be organized.
- Schools should be regarded as part of a local or regional network with all stakeholders contributing to the advancement of VET in the region. Such networks can be formalized to some extent.
- Schools should have the opportunity to apply for seed money and incentives to launch innovations within the scope of their VET activities.

Rights and duties of companies in a dual VET system

If companies are to take new responsibilities in a dual VET system, their rights and duties have to be clarified as part of the revised VET law. Among others, criteria for the suitability of companies and instructors in

charge of work-based learning are to be defined. Also, the arrangements to be settled in the contract between the company and apprentices, trainees or students should be regulated.

Especially in the phase of launching the dual VET system, there is tension between safeguarding the quality of work-based learning phases in the company and their suitability and readiness to participate in VET programs. One way to handle this tension would be to define an ideal outcome, but also to organize interim steps necessary for the innovation to gain ground. SMEs in particular may have some barriers to overcome and may need adequate support in terms of counselling and incentives.

Role of the Chamber of Commerce in running a dual VET system

The Chamber of Commerce is in the process of modernizing its profile. Among others, the advancement of a dual VET system is on the agenda of current discussions. One possible benchmark to discuss is the role the chamber takes in the German or Austrian VET system. In these countries, chambers take responsibilities of public administration in the dual VET system. Among others, they take stock of the apprenticeship contracts, monitor compliance with legislative regulations or promote the acceptance and quality of dual VET offerings especially with regard to in-company training.

Chambers of Commerce are close to companies and employers, although they do not necessarily have extended sector knowledge. For that reason, in the German VET system, chambers are not involved in curriculum development but take responsibility for overarching issues.

In the Serbian context, the Chamber of Commerce can play an important role in launching and running the dual VET system. For example, the following tasks could be considered when discussing the role of the Chamber of Commerce in the future VET system:

- Promote the change processes towards the dual VET system especially among stakeholders in the economic field.
 - Identify economic sectors and occupations suitable for transformation into dual VET programs in the launching phase of the new VET system.
 - Identify occupations in urgent need for qualified employees and/or modernized curricula.
- Convince employers and companies to participate in dual VET programs.
- Support the administration and enforcement processes (e.g. take stock of the apprenticeship contracts, monitor compliance with legislative regulations; promote the acceptance and quality of dual VET offerings especially with regard to in-company training; organize exams; approve companies to train apprentices)
 - Facilitate networks and communities for sharing good practices between companies.
 - Organize a portfolio of services for companies (e.g. counselling, training) to support the transformation process towards the implementation of dual VET programs.
- Implement a system of quality development for the company part of the system.
- Participate in processes of qualification analysis and the transfer into curriculum development.
- Participate in the (new) Council for Vocational Education and Adult Education (CVEAE).
- Introduce a levy-system in specific economic sectors based on the approval of companies.

As a follow up to the role the Chamber of Commerce takes in the new VET system, respective provisions have to be stipulated in the VET law. Also, within the Chamber of Commerce, appropriate capacities and resources have to be organized and provided in due course.

Bodies for launching and operating a dual VET system

Apart from the Chamber of Commerce which is primarily supposed to take on major responsibilities with regard to the company part of the VET programs, different bodies could assume complementary tasks. On the one hand, there are bodies closely affiliated to the vocational schools, while, on the other hand, there is a need to have a body accommodating and coordinating the different perspectives and interests.

The ultimate responsibility for the constitution and operation of the VET system lies with the government. The government (or rather the ministries responsible for defined tasks) can delegate specific responsibilities to affiliated bodies (e.g. the IIE – Institute for Improvement of Education or the IEQE – Institute for Education Quality and Evaluation) or can set up advisory councils (e.g. the CVEAE – Council for Vocational Education

and Adult Education). In some cases, councils can be allowed to take decisions in defined areas (e.g. NEC – National Education Council). In addition to the bodies mentioned here, Sector Skills Councils (SSC) were established on a pilot basis in order to involve industry in such areas as curriculum development on the national level or ‘Matura’ exams on the school level.

Based on the current governance structure, the following suggestions are given for discussion:

- The national government bears ultimate responsibility for the constitution and operation of the VET system.
- The Ministry of Education, Science and Technological Development (MoESTD) carries the responsibilities relating to the school part of the dual VET system. As is already the case, it may share responsibility with other ministries or delegate specific tasks to affiliated bodies (see chapter 3.6 and 3.9).
- The Chamber of Commerce is to assume major responsibilities with regard to the company part of the dual VET system. Details are outline above. The Chamber of Commerce may consider setting up committees which take on the tasks and roles that the Sector Skills Councils piloted.
- The Council for Vocational Education and Adult Education (CVEAE) is to serve as a coordinating and decision-making body in charge of all affairs of relevance to the operation of the VET system. Apart from its current profile, it takes on the responsibilities of the NEC related to VET (e.g. adopting curricula, programs and the final exam program; recommending the approval of textbooks; giving opinion concerning the laws and other regulations governing VET). As is currently the case, the CVEAE should include expert representatives of the Chamber of Commerce, craftspeople, employers’ association, vocational education experts, representatives of labor, employment and social policy institutions, VET schoolteachers and members of representative trade unions. In addition, representatives from science should also be members of the CVEAE (see next paragraph).
- The establishment of an independent research institute dealing with relevant research issues for the advancement of the VET system should be considered. This institute could either be connected to a faculty at a university or be established as an *independent* unit linked to the CVEAE.

The recommendations can be summarized as follows:

- Support vocational schools to actively shape their role as part of a VET network in their region.
- Adjust legislation to incorporate the rights and duties of companies in a dual VET system.
- Define the facilitating role of the Chamber of Commerce to assume major responsibilities with regard to the company part of the dual VET system.
- Revise the role of the Council for Vocational Education and Adult Education (CVEAE) to serve as a coordinating and decision-making body in charge of all VET affairs.
- Introduce research capacities backing the development of the VET system.

5.2.4. Ensuring sustainable financing

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 Ensuring sustainable financing | <ul style="list-style-type: none"> • Donor support providing extra resources resulting in project modelling and the guiding of future reforms. | <ul style="list-style-type: none"> • VET financing highly depends on public funding. Therefore, shortcomings in public spending very quickly have an impact on the quality of VET programs. • Need to conceptualize and implement a comprehensive VET financing system to involve all those who benefit from the outcomes of VET programs. |

From the perspective of public financing, school-based VET systems are highly resource-intensive. If part of the VET program can be organized in companies, this can relieve public spending – or when launching innovations, can be spent on reform implementation.

Apart from the transition period, a sustainable financing system has to be implemented in the long run. As described in chapter 2.6, in principle there are two ways of financing a VET system. One is public funding by earmarking taxpayers' money to cover the various expenditures within the VET system. The second way is a co-funding model charging all those who benefit from the achievement. The following suggestions basically favor the co-funding model, but argue for a careful, stepwise implementation. The following considerations may guide the development of a VET financing system resulting in a co-funding model:

- Capacity and resources freed up by a reduction of lessons at vocational schools due to shifting part of the VET program into companies will primarily be used to kick-start the implementation process. Additional capacity will be available due to a demographic decline in the number of school leavers (see chapter 3.1).
- Basically, teachers will not be dismissed but resources available due to retirements will be used for re-allocation of funds within the VET system.
- There will be no remuneration of trainees or students, if they spend less than 50% of the VET program in a company. For apprentices with a larger share, they should be remunerated. This could be financed from different sources: (1) Subsidies from the government; (2) Company; (3) Levy-system distributing the burden on the companies of the economic sector.
- Subsidies from the government derive from the savings made in the financing of vocational schools. They should only be paid in a transitional period, following the subsidiarity principle and should benefit in particular financially burdened companies or economic sectors.
- A levy-system could be introduced in specific economic sectors by the Chamber of Commerce based on the approval of companies. Germany and Switzerland provide good practices on how such a system could be operated (see chapter 2.6).

The recommendations can be summarized as follows:

- Use resources saved from the demographic decline and the reduction of lessons in the dual VET system for the implementation of the reform.
- Start incrementally introducing a co-funding model for ensuring sustainable financing as soon as dual VET programs have been consolidated.
- Introduce a remuneration scheme for apprentices who spend most of their time in a VET program in a company.

5.2.5. Attracting employers to VET

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 Attracting employers to VET | <ul style="list-style-type: none"> • Some good practices of employers' involvement in VET programs. | <ul style="list-style-type: none"> • Attracting employers and companies for the broad promotion of VET. • Identifying first movers and an early majority of companies committed to provide opportunities for work-based learning and access to modern technological equipment. • Getting companies and employers systematically involved in processes of curriculum development. • Introducing formal mechanism to safeguard the quality of practical training. |

One of the match-winning points for the implementation of a dual VET system is to succeed in attracting a sufficient number of employers and companies capable and willing to participate in the new system. There are many good arguments for companies to get involved (see chapter 2.9), but the challenge at a time when the economy is fragile, especially with regard to SMEs, is demanding. Participation can take place in many ways, but the largest need for action exists in the provision of quality apprenticeship positions.

Gaining the support of companies in many cases is the end of a process with different stages. For example, Hall & Hord (2001) distinguish the following seven phases (which they call "levels of concerns") on the part of users: awareness (little concern), informational (collecting information), personal (considers what innovation might

mean for oneself), management (attention focused on how to deal with the change), consequence (attention focused on the impact and consequences), collaboration (exchange with others on the use of innovation), refocusing (exploration of more benefits and alternatives of use). Depending on the stage in which a potential employer stands, different appeals are appropriate. Ideally, it is advisable to start with those open-minded and supportive companies already on a higher stage. It can also be advantageous to start in economically dynamic industries with high demand for skilled human resources. For them, the 'double benefit' argument may be striking: (1) Companies from attractive industries are regarded as attractive employers and attract the best school leavers; (2) training apprentices allows the company to assess the performance and the fit of apprentices for a workplace; and they can choose the best graduates to employ after the apprenticeship.

Beyond good arguments and useful areas for participation, two facets seem to be very important in approaching companies and asking for their support:

- Showcases and functioning models of dual VET experiences from other sectors, industries or regions which may serve as door openers.
- Trustworthy institutions and experts available for support, who understand the logic of private companies, speak private sector language and avoid strange jargon (e.g. bureaucratic terminology).

It is evident that institutions such as the Chamber of Commerce and employers' associations can play a crucial role in attracting companies as they best meet the requirements outlined in the second bullet point.

The recommendations can be summarized as follows:

- Collect a portfolio of convincing arguments for attracting employers to participate in a dual VET program.
- Distinguish useful areas for participation.
- Collect showcases and good practices of economic sectors or companies benefitting from their participation in a dual VET program.
- Identify trustworthy institutions and experts to persuade companies to join dual VET programs.

5.2.6. Promoting VET attractiveness to school leavers

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 Promoting VET attractiveness to school leavers | <ul style="list-style-type: none"> • There are some good arguments to convince primary school graduates to join a VET program. | <ul style="list-style-type: none"> • Provide showcases of good practices demonstrating that there are (1) high quality VET offerings; (2) attractive opportunities once a VET program has successfully been passed. • Make arguments for choosing the VET route after compulsory schooling broadly available, especially in primary schools when pupils are struggling with making a decision on what to do after leaving school. • Design attractive pathways starting with high quality dual VET programs and ending with attractive prospects for satisfying employment after graduating from the VET program. • Safeguard permeability into higher education, but make sure that the pathway from VET to higher education is only taken by those able and truly committed to academic studies. |

As pointed out in chapter 3.11, at first glance four-year VET programs in particular seem to be highly attractive to primary school leavers. However, a deeper look reveals that most of the graduates regard this program as a transition into higher education. Three-year programs are evidently much less attractive, given the low uptake and the high dropout rate.

The perception of attractiveness to a large degree derives from the function a VET program exhibits for serving existing aspirations and motivations. Basically, there are a few major drivers which have to be addressed when trying to attract young people to a VET program. The key motives that guide school leavers in their

career decision are a satisfactory salary, a safe job, good working conditions and prospects of promotion in the job (Baethge et al., 2014, 23ff).

Once the profiles of the three- and four-year programs are sharpened and the key messages phrased in chapter 5.2.1 get across, there are some good reasons to believe that the attractiveness of VET programs can be boosted:

- In the three-year programs in particular, work-based learning following a quality standard set out in a curriculum may be regarded as an attractive alternative to learning theory at school. If people gain the impression that they will learn relevant competences for working life in a VET program, they will more likely be interested in joining a program.
- Earning some money during an apprenticeship can trigger additional motivation.
- Prospects for remaining in the company after the apprenticeship in satisfactory employment also sparks motivation, especially in times of high unemployment.
- Prospects for continuing education after an apprenticeship within a permeable education system ease the fear that VET programs are a dead-end.
- An indispensable condition for raising the attractiveness of VET is the quality of a VET program in the respective company.

To sum up, there is great potential to attract young people to choose a VET program if it can provide (at least many of) the characteristics outlined above. However, the possible advantages have to be brought to the attention of the potential candidates in an adequate manner. Again, showcases of good practices of high quality VET offerings with subsequent opportunities could help. To some degree, career choices are not solely based on an assessment of information; they also have an emotional element. Also, the process of choosing an occupation should already start during primary school. For example, in a recent GIZ project, the occupation of welder was successfully highlighted by introducing this occupation in primary schools. Details on the occupational profile were complemented by information about the high demand for this occupation in companies and corresponding job prospects, salary and opportunities for promotion, which resulted in quite a good number of school leavers opting for this occupation.

The recommendations can be summarized as follows:

- Campaign for a specific VET program by addressing the key motives of young people when they are making career choices.
- Start introducing VET career options as early as in primary school.
- Introduce showcases and good practices for raising awareness of and interest in a specific VET program.
- Make sure that a specific VET program can deliver what is promised (in terms of quality and employment prospects).

5.3. Designing dual VET programs

5.3.1. Anchoring the dual principle in the VET programs

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 Anchoring the dual principle in the VET programs | <ul style="list-style-type: none"> • Dual principle is anchored in the Law on Secondary Education in general terms. • VET curricula assign lessons to practical teaching and professional practice. | <ul style="list-style-type: none"> • It remains open to what extent and to what quality practical instruction is implemented in the VET programs. • Company-based practice is limited in most VET programs. • A shared understanding of the quality of practical instruction as part of the VET programs is missing. |

As pointed out in chapter 3.3, effective and sustainable learning in dual VET programs requires an alternation of theory and practice, knowing and doing. School-based knowledge has to be applied to the performing of practical tasks and the solving of challenging problems; experiences in practice have to be reflected in order to transform cursory impressions into competences. Moreover, any practical experiences within a VET

program need to be conducive to learning. So far, in most VET programs, practical learning is an integral part of the curriculum and vocational schools are expected to organize company support in implementing this requirement. However, neither quality nor quantity of company-based practical learning stages is regulated. Overall it is fair to say that company-based learning is more of an exception than the common reality in most VET programs. In many cases practical learning is provided within VET schools.

Thus, in future VET programs the share of practical learning should be predominantly offered in companies according to the quality standards stipulated in the law (in general terms) and the curriculum (in particular).

In doing so, company-based practical learning is not meant to exclude or replace school-based learning in VET. Both modalities are most effective when they complement each other rather than compete (ETF, 2013b, 4). Work-based learning in companies is an indispensable component of a dual VET system for many reasons. Purely school-based learning has structural limits with respect to the preparation of the workforce, particularly in sectors where content is non-academic. Learning happens with authentic work processes, advanced technology, greater proximity of learning to production, acquisition of work attitudes such as taking responsibility, meeting deadlines, improving career awareness, developing self-confidence, self-esteem, self-efficacy and motivation (ETF, 2013b, 14f.). With these characteristics, work-based learning can make VET more attractive to learners.

Work-based learning in companies “is learning that takes place in a real working environment through participation in the work process” (ETF, 2013b, 4). Work-based learning is a very broad concept and comes in many different forms. The following chart provides an overview on possible typical occurrences of work-based learning. Within these different types, learners can take the status of a student, trainee or apprentice.

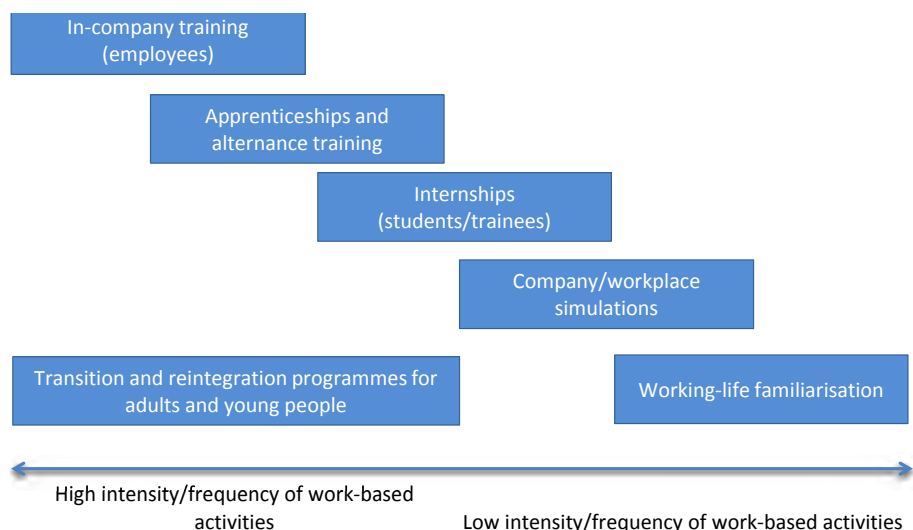


Figure: Types of work-based learning (ICF GHK, cited in ETF, 2013b, 13).

A continuum of learning at work with greater emphasis on the learning processes is provided by Eraut (2007).

| Work-processes with learning as by-product | Learning activities located within work or learning processes | Learning processes at or near the workplace |
|----------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| Participation in group processes | Asking questions | Being supervised |
| Working alongside others | Getting information | Being coached |
| Consultation | Locating resource people | Being mentored |
| Tackling challenges tasks and roles | Listening and observing | Shadowing |
| Problem solving | Reflecting | Visiting other sites |
| Trying things out | Learning from mistakes | Conferences |
| Consolidating, extending and refining skills | Giving and receiving feedback | Short courses |
| Working with clients | Use of mediating artefacts | Working for a qualification |
| | | Independent study |

Figure: Continuum of different intensities of work-based learning (Eraut, 2007)

A major concern with regard to work-based learning in companies is their quality. Some employers view VET not so much an investment in future skills but rather as a way to sustain low-cost production. “If workplaces and work practices are not learning-conducive and the potential for learning is low, WBL will obviously be less effective than other modalities, or even ineffective” (ETF, 2013b, 9). Therefore, the following quality factors are identified which help to distinguish good and poor examples of work-based learning offerings:

- Do the work tasks in the company have learning potential?
- Do trainees receive support and constructive feedback from co-workers, instructors and mentors?
- Is staff time dedicated to planning, learner placement, assessment, workplace supervision and training?
- Are there good trainers, instructors or mentors taking care of the trainees?
- Are there appropriate quality assurance mechanisms (i.e. learning plans, counselling support, documentation and assessment of work-site learning activities)?

It should be noted that these factors describe an ideal. As such, they might represent the direction as well as a picture of how it will look at the end of the road. At the same time, one has to be aware that the achievement of the objectives involves many interim steps. Towards this, appropriate support and incentives for the companies as well as a strict monitoring of the process and sanctioning of misbehavior whenever necessary must be established. Language and the conceptual approach might be important: It is not about punishing companies for misbehavior but commending and awarding those companies creating good practices. In practice, this requires the definition of a minimum standard that no one is allowed to fall below; it also requires approaches for highlighting those who perform considerably above the standards. The Chamber of Commerce could take the lead in this important area of quality assurance.

The recommendations can be summarized as follows:

- Ensure that the share of practical learning in a VET program is predominantly offered in companies.
- Stipulate minimum quality standards for company-based learning in the law (in general terms) and the curriculum.
- Organize support and incentives for companies for implementing high-quality practical learning.
- Implement monitoring and sanctioning processes to counteract companies not willing to live up to their responsibility within a VET program.

5.3.2. Investigating the demand for (future) qualifications and competences

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 Investigating the demand for (future) qualifications and competences | <ul style="list-style-type: none"> • There are some foundations in the defining of priorities for the development of new VET curricula. • There are bodies which might take on the responsibility to facilitate systematic and coherent processes of future-oriented development of VET curricula. | <ul style="list-style-type: none"> • Consider the (high) number of occupational profiles and look at how relevant profiles could be clustered into ‘occupational families’. They could be phrased in modern language, increasing their attractiveness to young people. • Tasks and responsibilities should be defined and assigned to appropriate actors/bodies in charge of facilitating a future-oriented development of VET curricula. |

Under the dual principle, the alternation of theory and practice as a supporting pillar of a dual VET program is specified. However, what competences should be acquired within the phases of theory and practice is left open. The criterion of ‘relevance’ specifies that VET programs should not (only) prepare learners for today’s requirements but also for dealing with future challenges. As outlined in chapter 3.4, research on a continuous basis could help satisfy this ambition, but it is of utmost importance that the relevant actors from the education and economic sector are involved in process of the development of VET curricula.

Basically, there are two main players in charge of conducting this crucial process. On the part of the education system, the Ministry of Education, Science and Technological Development (MoESTD) with its affiliated institutes (especially the IIE – Institute for Improvement of Education) has to drive the process with regard to

the school part, while the Chamber of Commerce (functionally enlarged by the tasks the SSCs – Sector Skills Councils, carried out in the pilot phase) takes corresponding responsibilities for the company part.

Considering the huge complexity caused by the currently more than 280 occupational profiles (see chapter 3.1), two practical considerations are put forward:

- Modernization of occupational profiles and curricula should be prioritized. As pointed out in chapter 3.4, the Chamber of Commerce has already drafted a list with occupations in various economic sectors which should be modernized first. The list could be updated on a continuous basis according to new opportunities and support from other sectors.
- All newly revised occupational profiles and curricula should be drafted according to current standards of curriculum development. Some major characteristics would be: competences distinguishing knowledge, skills and attitudes (as opposed to content); clustering similar occupations into ‘occupational families’; using modern language; assigning competences to appropriate learning venues; linking competences and occupational profiles to the National Qualification Framework).

The recommendations can be summarized as follows:

- Make research capacities available to collect data on future qualification requirements
- Assemble expertise from the educational and the economic sectors for identifying and agreeing on competences needed to deal with future challenges.
- Mandate the Ministry of Education, Science and Technological Development (MoESTD) for the school part and the Chamber of Commerce for the company part to facilitate the development and specification of future-oriented VET curricula in their area.
- Ensure that drafted curricula are state-of-the-art.

5.3.3. Designing flexible curricula

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 Designing flexible curricula | <ul style="list-style-type: none"> • There is a workable foundation in the Law for developing flexible curricula serving the heterogonous requirements of different employers and companies. | <ul style="list-style-type: none"> • Transfer of good practices with modularized approaches into the regular development of future VET curricula. |

Curricula are to implement the dual principle, should be relevant and should provide some flexibility for meeting the existing heterogeneity on the part of the companies offering apprenticeships. One proven way that allows for such flexibility is a modularized curricular framework. Modularized structures are provided for in the Law on Secondary Education and they have already been implemented in some of the pilot profiles developed and tested in previous years.

In continuing the developments already commenced, the following aspects should be taken into account:

- Modules are suitable organizational units for assigning parts of the curriculum to the learning venues in charge of implementing the VET program.
- Modules should not be too fine-grained but should cover complex working processes taking at least two months of learning time within the program. Otherwise, the program runs the risk of the learners not seeing the wood for the trees.
- Modules can be organized to link different occupational profiles and cluster them into occupational profiles.
- In order to avoid learning processes solely focused on details; specific modules should be created which place emphasis on the integration of details or processes. For example, in Luxembourg the whole VET system was structured into modules but two so-called ‘integration modules’ were incorporated pursuing the objective of enabling apprentices not only to gain competences in separated areas but also to deploy them in wider contexts (Euler & Frank, 2011).

The recommendations can be summarized as follows:

- Divide curricula into modules.
- Avoid modules being too fine-grained.
- Consider connecting modules with integrative units in order to enable learners to gain a comprehensive understanding of the processes.

5.3.4. Implementing lean administration and enforcement processes

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|-----------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7 Implementing lean administration and enforcement processes | | <ul style="list-style-type: none"> • Decide on the status, rights and duties of the main actors (in particular the young people, companies, vocational schools) in a VET program. • Define, regulate and enforce the key processes of a dual VET program. • Adjust the regulatory framework accordingly, including work-based learning phases in companies. • Define the tasks and responsibilities of the key stakeholders (e.g. ministries, chamber) in the dual VET program. |

The shift from school-based to dual VET programs requires new administrative mechanisms, especially in relation to the company part. Within the new architecture of the VET system, there will be two types of VET program: company-based VET programs (especially the three-year programs) which formally regard the learner as an apprentice with defined rights and duties, and school-based VET programs (especially the four-year programs) with a comparatively short time spent in a company which treat the learner as a student and/or trainee.

In both areas, administration and enforcement processes should be as lean as possible. The following suggestions should provide a framework for discussing and deciding the details in this area of implementation. There are five processes with assigned proposals for regulations:

| Processes | Apprenticeship (company-based) | Student-/traineeship (school-based) |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Admission to the program | Up to the company. | Admission by vocational school based on pre-defined criteria; substitution for current enrollment system. |
| Contractual basis | Apprenticeship contract based on rights and duties of both parties, stipulated by the law. | Trainee contract based on rights and duties, stipulated by the law (or agreed on a regional level). |
| Provision of VET learning experiences | As defined in the occupational profile/curriculum with respective responsibilities of the learning venues. | |
| Exams, degrees and certificates | Organized on a local/regional level, conducted by an exam committee (involving representatives from the different learning venues) <ul style="list-style-type: none"> • Development of examination questions/assignment. • Realization of exams. • Awarding of degree/issuing of certificate by committee on behalf of state authority. | |
| Approving the suitability of companies for participation in a VET program | Suitability check by the Chamber of Commerce based on criteria set out in legislation. | - |

On the part of the schools, the current supply-driven enrollment system would have to be substituted with a demand-driven system based on realistic admission criteria. This shift requires more flexibility on the part of vocational schools, which correspondingly require more autonomy in defining class sizes and other organizational adjustments.

The recommendations can be summarized as follows:

- Design administrative and enforcement processes to be as lean as possible.
- Substitute the current (supply-driven) enrollment system with a demand-driven admission system.
- Stipulate appropriate contractual arrangements on the rights and duties of the parties with regard to apprenticeships and traineeships.
- Organize exam committees (involving representatives from the different learning venues) on the local/regional level and define responsibilities and processes for holding exams and awarding degrees.
- Introduce criteria stipulated by law for approving the suitability of companies to participate in a VET program.

5.3.5. Conducting quality development

The analysis in the previous chapters resulted in the following conclusions:

| Components | Achievements | Challenges |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 Conducting quality development | <ul style="list-style-type: none"> • Clear expectations in the Law on Secondary Education on VET schools to set up processes of continuous evaluation and quality development. • Clear expectations to define quality standards for some major components of the VET system. | <ul style="list-style-type: none"> • Quality development in VET schools is still in its infancy. There is a need to conceptualize and continue existing programmatic ambitions and first experiences in implementation. • Quality development in the context of work-based learning urgently needs a conceptual framework and an agency taking concerning itself with the implementation and enforcement. |

Any quality development system has to provide answers to three key questions (see chapter 3.9):

- What is the object of quality development that has to be regulated in the form of quality standards?
- Who is responsible for the monitoring and implementation of regulated quality standards?
- How are processes of quality development designed and implemented in the learning venues?

While quality development standards and processes for VET schools are at least partly in progress, quality development outside the VET schools (e.g. practical work, work-based learning in companies) is not yet far advanced. Hence, the implementation and enforcement of quality development with regard to learning venues outside the VET schools has to be addressed.

Given the different starting points for vocational schools and companies participating in VET programs, departure points for the learning venues are different. For the school-based part in VET programs, existing approaches (see chapter 3.10) introduced by the Law on Secondary Education, the Strategy for Development of Secondary VET or the National Education Council need consolidation and transferring into a unified quality framework addressing the key questions outlined above. Among others, the following quality objects should be considered in particular:

- Competences of teachers.
- Approaches to teaching.
- Equipment, technology and learning material being up-to-date.
- Responsiveness to school environment.
- Validity of assessments and exams.
- Policy on professional development of school staff.

For the company-based part in VET programs, developments have to deal with the basics. Two main factors deserve priority at this stage of evolution:

- Minimum suitability standards for the participation and involvement of companies in the VET program.
- More ambitious quality standards for the design of work-based learning processes (see chapter 5.3.1).

The recommendations can be summarized as follows:

- Consolidate existing approaches introduced for the school part of the VET system and transfer them into a unified quality framework addressing the key questions of quality development.
- Introduce minimum quality standards for licensing companies to participate in VET programs.
- Conceptualize key quality factors for analyzing and developing the quality of work-based learning.

5.4. Adjusting legislation

The following table summarizes the recommendations put forward in the previous chapters and indicates which of them require legislative provisions. In a subsequent step, considerations will focus on whether these required provisions need new legislative initiatives or whether they are already covered by the existing Law on Secondary Education.

| RECOMMENDATIONS | RELEVANT FOR LEGISLATION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 5.2.1 Architecture of the VET system | |
| Three-year VET programs: | |
| • Key message: Three-year programs create opportunities for employment with a strong element of company-based dual VET. | |
| • Strengthen the importance and relevance of work-based learning by involving employers in the design and operation of the programs. | ✓ |
| • Ensure standardized, work-based learning processes in companies as a key component of the dual VET program. | |
| • Implement reform towards dual VET profiles step-by-step. | |
| • Consider a flexible duration for this type of VET program. | |
| Four-year VET programs: | |
| • Key message: Four-year programs are a pathway to employment in qualified professions in knowledge-intensive occupations as well as to entry into academic studies. | |
| • Consider different models providing flexible ways to serve the main purposes expressed in the key message: “Training by stages”; “vocational gymnasium”; “fork mode | ✓ |
| 5.2.2 Defining strategic objectives for the (future) VET system | |
| • Confirm the strategic foundation of the VET system with its comprehensive coverage of economic, societal and individual objectives. | ✓ |
| • Launch a process aimed at defining priorities in terms of economic sectors/occupations to be transformed into dual VET programs. | |
| • Anticipate resistances to change and design counteractive measures. | |
| • Agree on a definition of which characteristics make a VET program ‘relevant’. | |
| 5.2.3 Leading partnership network between government and stakeholders | |
| • Support vocational schools to actively shape their role as part of a VET network in their region. | |
| • Adjust legislation to incorporate the rights and duties of companies in a dual VET system. | ✓ |
| • Define the facilitating role of the Chamber of Commerce to take major responsibilities with regard to the company part of the dual VET system. | ✓ |
| • Revise the role of the Council for Vocational Education and Adult Education (CVEAE) to serve as a coordinating and decision-making body in charge of all VET affairs. | ✓ |
| • Introduce research capacities backing the development of the VET system. | ✓ |
| 5.2.4 Ensuring sustainable financing | |
| • Use resources saved from the demographic decline and the reduction of lessons in the dual VET system for the implementation of the reform. | |

| RECOMMENDATIONS | RELEVANT FOR LEGISLATION |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <ul style="list-style-type: none"> Start incrementally introducing a co-funding model involving companies and students for ensuring sustainable financing as soon as dual VET programs have been consolidated. Introduce a remuneration scheme for apprentices who spend most of their time in a VET program in a company. | (✓) |
| 5.2.5 Attracting employers to VET | |
| <ul style="list-style-type: none"> Collect a portfolio of convincing arguments for attracting employers to participate in a dual VET program. Distinguish useful areas for participation. Collect showcases and good practices of economic sectors or companies benefitting from their participation in a dual VET program. Identify trustworthy institutions and experts to persuade companies to join dual VET programs. | |
| 5.2.6 Promoting VET attractiveness to school leavers | |
| <ul style="list-style-type: none"> Campaign for a specific VET program by addressing the key motives of young people when deciding on their career choices. Start introducing career options in VET as early as in primary school. Introduce showcases and good practices for raising awareness of and interest in a specific VET program. Make sure that a specific VET program can deliver what is promised (in terms of quality and employment prospects). | |
| 5.3.1 Anchoring the dual principle in VET programs | |
| <ul style="list-style-type: none"> Ensure that the share of practical learning in a VET program is predominantly offered in companies. Stipulate minimum quality standards for company-based learning in the law (in general terms) and the curriculum. Organize support and incentives for companies for implementing high quality practical learning. Implement monitoring and sanctioning processes to counteract companies not willing to live up to their responsibility within a VET program. | ✓ |
| | ✓ |
| | (✓) |
| | ✓ |
| 5.3.2 Investigating the demand for (future) qualifications and competences | |
| <ul style="list-style-type: none"> Make research capacities available to collect data on future qualification requirements Assemble expertise from the educational and the economic sector for identifying and agreeing on competences required to deal with future challenges. Mandate the Ministry of Education, Science and Technological Development (MoESTD) for the school part and the Chamber of Commerce for the company part to facilitate the development and specification of future-oriented VET curricula in their area. Ensure that drafted curricula are state-of-the-art. | ✓ |
| | ✓ |
| | ✓ |
| | ✓ |
| 5.3.3 Designing flexible curricula | |
| <ul style="list-style-type: none"> Divide curricula into modules. Avoid modules being too fine-grained. Consider connecting modules with integrative units in order to enable learners to gain a comprehensive understanding of the processes. | ✓ |
| | |
| | (✓) |
| 5.3.4 Implementing lean administration and enforcement processes | |
| <ul style="list-style-type: none"> Design administrative and enforcement processes to be as lean as possible. Substitute the current (supply-driven) enrollment system with a demand-driven admissions system. Stipulate appropriate contractual arrangements on the rights and duties of the parties with regard to apprenticeships and traineeships. | ✓ |
| | ✓ |

| RECOMMENDATIONS | RELEVANT FOR LEGISLATION |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <ul style="list-style-type: none"> Organize exam committees (involving representatives from the different learning venues) on the local/regional level and define responsibilities and processes for holding exams and awarding degrees. | ✓ |
| <ul style="list-style-type: none"> Introduce criteria stipulated in the law for approving the suitability of companies to participate in a VET program. | ✓ |
| 5.3.5 Conducting quality development | |
| <ul style="list-style-type: none"> Consolidate existing approaches introduced for the school part of the VET system and transfer them into a unified, quality framework addressing the key questions of quality development. | (✓) |
| <ul style="list-style-type: none"> Introduce minimum quality standards for licensing companies to participate in VET programs. | ✓ |
| <ul style="list-style-type: none"> Conceptualize key quality factors for analyzing and developing the quality of work-based learning. | (✓) |

The above table clearly identifies the main areas for possible adjustments to VET legislation. At this point, explanations of relevant recommendations can only be indicated. Responsibility rests on legislators to suggest details and positions in the legal framework.

The following notes are meant to provide some elaboration of the components requiring further legal consideration:

- With regard to the architecture of the VET system (5.2.1), it is advisable to clearly distinguish the various VET programs, their key messages, internal variations (e.g. duration, models) and their main target groups in the law. As the scope of the current Law on Secondary Education will be extended and reach beyond the school part of VET, this could also be incorporated explicitly.
- Although the strategic objectives are already well-documented in the existing Law on Secondary Education, they should be confirmed and declared valid for all VET programs regulated in the law (5.2.2).
- The entire governance needs a complete legal overhaul due to the characteristics of dual VET programs and the new arrangements resulting from the higher share of the company part in the system (5.2.3). This means stipulating the roles of the learning venues, the rights and duties of the parties taking responsibilities and the new arrangement with bodies such as the Chamber of Commerce and the Council for Vocational Education and Adult Education (CVEAE). Furthermore, institutional arrangements for VET research have to be regulated.
- The transition from the school-based to a dual VET system needs adequate adjustments in the law. The recommendations outlined under 5.3.1 show some major characteristics which should be formally stipulated.
- This goes hand in hand with adjustments to the structure, content and development of curricula (5.3.2 and 5.3.3). The existing Law on Secondary Education has a couple of provisions which need to be reconciled with the requirements set out in the recommendations.
- The same applies to the adjustment of administration and enforcement processes (5.3.4). Most important here is the stipulation of appropriate contractual arrangement with regard to apprenticeships and traineeships (potentially addressing a remuneration scheme for apprentices – 5.2.4). Also the suitability of companies willing to participate in a VET program has to be regulated. Furthermore, the current regulations on the enrollment of students in vocational schools will have to be transferred into a coherent, demand-driven framework.
- Finally, existing rules on quality assurance in vocational schools would have to be extended to comprise a comprehensive framework for the whole VET system (5.3.5). Part of the framework will be the introduction of minimum quality standards for licensing companies to participate in VET programs.

6. CONCLUDING REMARKS

Supplying economy with qualified labor is one of the key challenges in Serbia (and beyond). Here, VET comes into play and may contribute to economic development and prosperity. However, VET is not only a functional measure for the promotion of economic goals, it also has the potential to improve the transition from school to working life and offer young people perspective for planning their careers and thus finding their roles in society.

Therefore, innovations and investment in VET are crucial prerequisites for preparing societies for the future. Serbia embarked on reform of the VET system as a part of the country's overall political and economic transition and VET reform has received strong interest from donors who wish to support these activities. While VET coverage of the student population is high, the considerable room available for quality improvements is in need of assessment. An accelerated reform of the VET system would help improve effectiveness and compliance with societal and economic needs.

One major ambition addresses the transformation from a school-based to a dual VET system. Such an ambition is both demanding and promising. It is demanding because there is no blueprint on how to design the change and it is promising because there is much potential for the advancement of the current VET system.

This study investigates the conditions and ways to make this ambition feasible. Starting off from a complete, perfect dual VET system (chapter 2), it contrasted the ideal with the existing reality (chapter 3) and identified the achievements and challenges (chapter 4). Subsequently, discussion of the challenges resulted in options and recommendations for change (chapter 5). These recommendations cannot be regarded as a substitute for the missing blueprint, but as food for thought for necessary discussions among the major stakeholders in the Serbian VET system. As such, they do not offer ultimate solutions but key questions and options for answering them.

There is one limitation mentioned at several points in this study. The VET system is part of the overall economic, social and cultural system in Serbia and as such the economic situation is crucial when assessing the role VET can play in the advancement of the Serbian society. Given the fragile structure of the current Serbian economy, the starting basis for VET reform does not seem to be very favorable. However, change theories contend that in times of strain and pressure, changes are much easier to launch than in times of prosperity and success.

ABBREVIATIONS

| | |
|--------|---------------------------------------------------------------------------|
| VET | Vocational education and training |
| CVEAE | Council for Vocational Education and Adult Education |
| OECD | Organisation for Economic Co-operation and Development |
| BIBB | Bundesinstitut für Berufsbildung Germany the Federal Institute for VET |
| LoFE | Law on the Foundations of the Education System |
| NEC | National Education Council |
| SSC | Sector Skill Council |
| SME | Small and medium enterprises |
| ETF | European Training Foundation |
| MoESTD | Ministry of education, Science and Technologic development |
| LSE | Law on Secondary Education |
| IIE | Institute for Improvement of Education |
| IEQE | Institute for Education Quality and Evaluation |
| NQF | National Qualification Framework |
| ILO | International Labor Organization |
| WBL | Work-Based Learning |
| QD | Quality development |

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