



Vocational School Teacher Education in Switzerland: Roles, Responsibilities, and Training

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Abstract

In Switzerland two-thirds of all young people completing compulsory education enroll in upper-secondary vocational education and training (VET) and subsequently choose one of around 230 occupations. Most VET programs consist of part-time classroom instruction (1–2 days a week) at vocational schools combined with part-time apprenticeship at a host company (3–4 days a week). There is also a large availability of professional education (PET) which can be

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attended after initial upper-secondary level VET training. Since VET and PET are highly connected, this chapter refers to vocational *and* professional education and training (VPET). Within this system specific teacher and trainer profiles are required. Providing training to apprentices at a host company, for example, requires work expertise as well as a pedagogical qualification, teaching vocational subjects at vocational schools or colleges of higher education requires work related as well as theoretical and pedagogical knowledge, whereas teaching general education subjects requires a teaching diploma but no work expertise. Because of the challenge of combining practical and theoretical training in VET and because young people can choose from a large variety of further studies and career options within the framework of professional education and training, various roles and different functions have to be assumed. The entire personnel educated for this purpose in Switzerland is called “professionals responsible for vocational and professional education and training.” This chapter focuses on their responsibilities, their training, and on the training and certification structures.

Keywords

Vocational education and training VET · Professional education and training PET · Teacher education · Switzerland · Vocational school · Workplace training · Host company · Branch course training center

Introduction

The academic performance of children and young adults is inter alia influenced by school-related factors of which teacher ability is generally seen to have the biggest impact on student learning (Hattie 2009). This is also assumed for the sector of vocational and professional education and training (VPET). Teachers and trainers and their professional qualities are a key factor for successful vocational and professional learning (e.g., OECD 2010; Hensen-Reifgens and Hippach-Schneider 2015, p. 17).

The quality of the work of VPET teachers is essential, because with their work at the interface between the education system and labor market they contribute to the efficacy and quality of the future workforce (Hensen-Reifgens and Hippach-Schneider 2015). The demands on the work of vocational and professional teachers and trainers are high and constantly changing, for example, due to innovations in products and processes within trades and the usage of new media and technologies, but also due to changing expectations of young people and societies (Hensen-Reifgens and Hippach-Schneider 2015, p. 17). Even though the work of VPET teachers and trainers is important and challenging, not much is known about their work and training (Kirpal and Wittig 2009, p. 2). One difficulty of the research in the field of VPET teachers can be seen in the fact that “VET is nationally focused like no other form of education” (Shaw et al. 2016, p. 94). Vocational and professional education and training respond to national economies, are “delivering to national employment needs,” and have to be able to adapt to local changes (Shaw et al. 2016, p. 94). Accordingly, it is difficult to make generalizable statements about VPET teacher education, and it is not easy for VPET institutions to

collaborate in research on a global scale. Also, practitioners have difficulties “to understand what equivalence there is in other countries to their job, or their courses, or the qualification level they teach” (Shaw et al. 2016, p. 99).

This chapter focuses on VPET teacher education in Switzerland and is based on research as much as policy papers, guidelines, and expert interviews. Switzerland has one of the lowest youth unemployment rates of OECD countries (OECD Data 2017). The dual structure of training, which can be found in Germany and Austria as well, enables early labor market experience of young adults as well as socialization into the world of work and employment opportunities after graduation. It can be assumed that “traditional apprenticeships, strongly supported by the firm, where the apprentices are trained for a large amount of time, are still an attractive alternative to firmly school-based VET-models, which produce in some cases overqualified, in other cases low qualified or simply wrongly qualified students and alumni, who face transition problems from school to the world of work” (Gonon 2007, p. 7). VPET in Switzerland facilitates the inclusion of almost all adolescents in the education system and leads to a high percentage of young adults with a professional qualification (Gonon 2007, p. 8). Apprenticeship teachers and trainers, who significantly contribute to the functioning of the VPET system, are rarely a research topic. Therefore, this chapter is a first attempt to summarize how training and certification of professionals responsible for vocational and professional education in Switzerland is conducted.

The Swiss VPET System

In this section an overview of the Swiss system of vocational and professional education and training (VPET) is provided, the framework in which the different roles and functions of professionals responsible for vocational and professional education have to be carried out.

After compulsory school, young people enroll either in upper-secondary vocational education and training (VET) or in upper-secondary schooling to get admission to universities. Two-thirds of all young people in Switzerland take part in VET programs. Although the number of students enrolling in VET is slowly decreasing, while upper-secondary schooling becomes more popular, with about 70% of each cohort, Switzerland currently has the highest percentage of students enrolling in VET in Europe. VET students work at a host company in a chosen occupation, and from the beginning of their apprenticeship, they earn a salary that increases over time. Besides the training at the host company, they attend a vocational school for 1–2 days per week where vocational subjects and general education subjects are taught. Some VET programs take place entirely at schools, where vocational and general education subjects are taught and practical skills are trained, but the majority of VET programs consist of schooling at a vocational school and “on-the-job training” at a host company. One particularity of the Swiss VET system is that there is a “third learning site” provided by labor market organizations. Labor market organizations carry out special training sessions (courses from 1 day to 1 week) “off the job” once or several times per year for learners from different companies. These

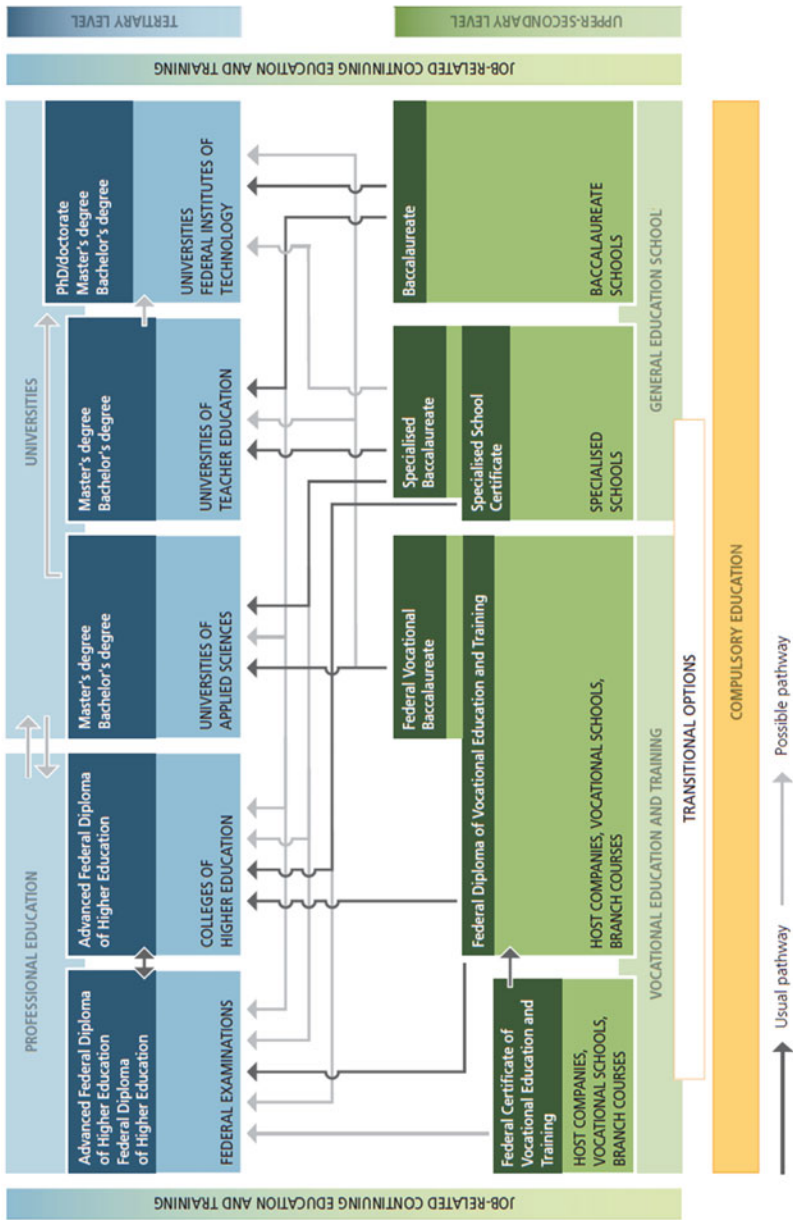
training sessions (branch courses) aim at connecting the knowledge of workplace and school-based learning (Wettstein and Gonon 2009, p. 175).

Regular VET programs take 3 or 4 years and lead to the Federal VET Diploma (Federal Diploma of Vocational Education and Training). It is also possible to attend a less demanding 2-year program (leading to the Federal Certificate of Vocational Education and Training) that consists of training at a host company and schooling at a vocational school as well (Stalder and Nägele 2011).

Tertiary-level professional education and training (PET) offers a variety of career options that build on upper-secondary vocational education and training (VET) and are aligned to labor market needs. After obtaining the Federal VET Diploma, young people can take federal examinations on two levels. Federal examination on level 1 can be attended to specialize in a particular field. It leads to the Federal Diploma of Higher Education. Federal examination on level 2 requires expertise in practice (working in the corresponding occupation for several years) and is intended for people that want to hold managerial positions. It leads to the Advanced Federal Diploma of Higher Education (State Secretariat for Education, Research and Innovation SERI 2017, p. 7). Since both examinations are competency-based, they provide the possibility to credit prior learning such as informal learning from working in the field. After obtaining the Federal VET Diploma, young people also can study at colleges of higher education. The study programs of colleges of higher education build on work-related knowledge and enable learners to develop specific skills as well as leadership and managerial competences. Besides the abovementioned VPET programs, there are lots of non-formal, job-related courses and seminars at all levels which support transition processes into the different programs and provide the possibility of lifelong learning.

Although the Swiss VPET system is aligned to the demands of the labor market, it is also an integral part of the education system (Gonon 2007, p. 9). The Swiss education system has no dead-end pathway. Instead it is highly “permeable.” Learners can switch between different levels and between VPET pathways and general education/university pathways (see Table 1). In the Swiss education system, “the academic-vocational divide” in the past last 25 years has diminished (Gonon 2007, p. 10). A popular career, for example, with both vocational and general education qualifications, can be realized through the Federal Vocational Baccalaureate (FVB) which exists since the early 1990s (Wettstein and Gonon 2009, p. 165). After upper-secondary vocational education and training, learners can attend a 1-year preparatory course in general education subjects and then take the FVB examination. The preparatory course is often also attended already during the 3- or 4-year VET program. Candidates that pass the FVB examination are entitled to enroll at universities of applied sciences. Holders of the FVB have the option to take the University Aptitude Test. This “pathway” exists since in the year 2003. Successful candidates are entitled to enroll in the cantonal universities or in one of the two federal institutes of technology (For further information about the Swiss VPET system, see Wettstein and Gonon (2009) or Dubs (2006).).

Table 1 The Swiss education system (Source: State Secretariat for Education, Research and Innovation SERI 2017)



Roles and Responsibilities at the Different Learning Sites

The Swiss VPET system is governed by three partners, the government, the cantons (communal authorities), and the labor market organizations. The government leads the VPET sector strategically, the cantons are responsible for implementing the strategic guidelines, and together with the government they finance the VPET sector. In all other sections of the Swiss education system, the cantons are fairly autonomous, while the VPET sector is centrally (nationally) managed since it is interlinked with the world of work and its regulations. The collaboration with labor market organizations of different trades facilitates a good coordination of VPET with the labor market.

The government provides ordinances (*Verordnungen*) for the VET program of every occupation based on the Federal Act on Vocational and Professional Education and Training (portal of the Swiss government 2017a). In the ordinances it is determined which part of the VET program is covered by vocational schools, host companies, or branch course training centers. Comprehensive curricula build on the ordinances and provide didactical guidelines for the specific occupations. They contain a detailed description of the aims and the structure of the program as well as of the organization of the branch courses and the qualification process. Curricula are also provided for PET programs. For each occupation there are committees, consisting of representatives from labor market organizations, cantons, and government that keep the ordinances and curricula up to date in respect to labor market requirements. For the professionals responsible for VPET, ordinances and curricula are relevant for their work at the following learning sites:

Vocational schools

- Teachers of vocational subjects
- Teachers of general education subjects, including sport teachers
- Teachers of subjects of the Federal Vocational Baccalaureate

Host companies

- Workplace trainers

Branch course training centers

- Branch course instructors

Colleges of higher education

- Teachers at colleges of higher education

The training and certification of the abovementioned professionals responsible for VPET is officially regulated and will be focused on in this chapter. Besides these professionals, other groups of people are working in the framework of VPET. An example are the trainers in the facultative preparatory courses for the federal examinations on levels 1 and 2 that are widely not regulated (Fazekas and Field 2013, p. 15),

people involved in job-related education and training such as seminars or workshops (also called continuing education and training (CET)), people working in examination processes within VPET, or managerial staff leading VPET institutions.

Vocational Schools

Learners are taught in classes from 10 to 24 learners in the closest VET school to their host company. Vocational schools often are specialized in one occupation or a group of occupations. All learners of one class learn the same occupation or very similar occupations. The vocational schools are organized by the cantons. To cover locally required schooling, inter-cantonal collaborations are possible. In most cases the students are taught by a teacher of vocational subjects, a teacher of general education subjects, and a sport teacher. Often preparation courses for the Federal Vocational Baccalaureate are held at vocational schools as well (Wettstein and Gonon 2009, p. 163).

Teachers of vocational subjects. Teachers of vocational subjects are responsible to teach the theoretical foundations and background knowledge of an occupation. In most cases they are holders of the highest professional qualification of the corresponding occupation (e.g., hold an Advanced Federal Diploma of Higher Education), have elaborated subject-related knowledge, and often have a great deal of working experience (Hof et al. 2011, p. 2).

Teachers of general education subjects. According to Gonon (2007), “preparing for the world of work does not only include the acquisition of solid professional skills but also of knowledge management skills and the ability to ask the relevant questions in order to prepare for uncertainties” (Gonon 2007, p. 10). Teachers of general education subjects are responsible to ensure that VET programs lead to an adequate level of general knowledge. Although teaching general education subjects like mathematics, languages, and communication, in their teaching teachers always refer to professional situations as a point of reference. Teachers of general education subjects are usually not experts in practice but have a high level of general knowledge. Typically they might, for example, have a regular teaching diploma for primary or secondary schools or they have studied at a university.

Teachers of subjects of the Federal Vocational Baccalaureate. Teachers of subjects of the Federal Vocational Baccalaureate (FVB) are responsible to prepare learners for the FVB examination and support them to develop the skill sets for studying. They are responsible to pass on extended general knowledge to VET learners. Students that prepare for the FVB examination are taught basically the same subjects as students in high schools, such as a first (regional) national language, a second national language, English, mathematics, and natural and social sciences (Erziehungsdirektion des Kantons Bern 2017a). Teachers of subjects of the FVB in most cases have an academic background and sometimes also are holders of a high school teacher diploma.

Host Companies

Dual VET requires low public expenses. Only around 25% of the costs of VET programs in Switzerland are paid out of public budget (of government and cantons); approximately 35% are paid by the host companies (who, in average, get these expenses back from the productive work outcomes of the apprentices). Around 40% of the costs are covered by VET learners, who, because they are receiving only a small salary, are financing a part of their training themselves (Maurer and Gonon 2013, p. 62). Cantons give companies the authority to train apprentices if they can provide adequate structures for it. The maximum number of apprentices simultaneously trained in a host company depends on the number of skilled workers that a company employs (Wettstein and Gonon 2009). To hire VET learners can be an advantage for enterprises because in most cases the productive outcome of the work of apprentices exceeds the training costs (Wettstein and Gonon 2009), and companies and labor market organizations profit from providing career prospects for young people because this secures the supply of skilled workers needed in a branch (Staatssekretariat für Bildung, Forschung und Innovation SBFI 2017a). Around 20% of all companies in Switzerland train apprentices (Mühlemann et al. 2007, p. 144). The engagement of firms in training is relatively stable over the years and a sufficient amount of posts for VET learners is provided. In the year 2017, firms in Switzerland offered 97,000 new posts for VET learners, of which in August 2017, 90,000 were taken. The supply exceeded the need of posts, 7000 posts for VET learners remained open (SBFI 2017b). Jobs for VET learners in general are opened in branches where the demands for skilled workers are high, which also means in branches, in which future skilled workers probably will find an employment.

In countries with dual VET systems, it is important that the “involvement and commitment of industry and firms” is continuously strengthened (Gonon 2007, p. 11). In Switzerland the engagement of enterprises in training apprentices is supported by the development of new forms of vocational training at workplaces such as intercompany alliances in which enterprises work together in training apprentices, which facilitates the development of the branch-specific skills (Wettstein and Gonon 2009, p. 122). Though, in general it can be assumed that “as long as training regulations and the market situation permit a cost effective training of apprentices, companies do not need specific labor market regulations or institutions to offer training posts” (Wolter et al. 2003, abstract). Cost-effective training can, for example, be ensured, if the major part of the VET training takes place at workplaces and not at vocational schools, so that apprentices are able to contribute effectively to the productive outcome of their host company and if workplace training is not hampered by “too restrictive curricular guidelines” (Wolter 2008; Maurer and Gonon 2013, p. 69). Also workplace trainer education should not be too cost- and time-consuming for that reason. In Switzerland the trainer education, that skilled workers who want to train have to attend, is relatively short, only taking 100 learning hours, which corresponds to 3 ECTS (The European Credit Transfer and Accumulation System (ECTS) was

Table 2 Training duration for teacher/trainer profiles “as a second job” and “on a full-time basis”

Profile	Specification	Learning hours	ECTS
Teachers of vocational subjects	As a second job	300	10
	On a full-time basis	1800	60
Teachers of general education subjects		1800	60
Sport teachers		1800	60
	With high school teacher diploma	300	10
Teachers of subjects of the FVB		1800	60
	With high school teacher diploma	300	10
Workplace trainers		100	3
Branch course instructors	As a second job	300	10
	On a full-time basis	600	20
Teachers at colleges of higher education	As a second job	300	10
	On a full-time basis	1800	60

established to make students’ workload comparable and transferable from one university in Europe to another. 1 ECTS point is equivalent to an average student workload of 30 h.) (see Table 2).

Workplace trainers. Workplace trainers in host companies generally have work expertise related to the business of the host company. They are responsible for supporting the practical skills development among apprentices, plan and evaluate their training, and “have a very important role to play by helping the apprentices to socialize in the world of work and to develop a professional identity as well as commitment to the enterprise” (Hensen-Reifgens and Hippach-Schneider 2015, p. 5). In small companies, the work of apprentices is closely coordinated with the work of the workplace trainer who is often also the head of the company. This allows the apprentices to acquire the skills by working together with a more experienced colleague, whereas “the trainer is a crucial role model for the following generation of employees” (Hensen-Reifgens and Hippach-Schneider 2015, p. 5). Apprentices working in larger companies are often trained by several skilled workers responsible for sections of the training curricula.

Typically, “on-the-job” training takes place while productive work is carried out for an internal or external client. During this process, instruction is secondary to production and training should not hamper productive work (Wettstein and Gonon 2009). VET learners also work without supervision and are responsible for a part of the productive work, which can include highly demanding and complex work steps, and some VET learners carry a lot of responsibility (Hoffman and Schwartz 2015). Workplace training provides the opportunity for “authentic learning processes.” The fact that what is learned at a workplace can directly be used with the workplace setting is considerably motivating for young learners (SBFI 2015, p. 5). A study that compared school-based VET programs to VET programs at workplaces showed that 89% of young people in VET preferred

workplace to school-based learning. Typical statements of young learners displayed in the study were “I am fed up with school,” “I want to do something real,” and “I want to work practically and not struggle with theories” (Mjelde 1993 cited by Gonon 2007, p. 7).

Branch Course Training Centers

Branch course training centers are organized by labor market organizations. The cantons support their development and have to ensure that all necessary courses are provided. Some of the costs for the branch courses are paid by the cantons which include corresponding contributions of the government; the other part is paid by the companies or by labor market organizations or, where they exist, out of vocational training funds (Wettstein and Gonon 2009, p. 176). Large labor market organizations hold regional training centers or even national training centers, like, for example, the “Center for Young Professionals in Banking (CYP).” Smaller labor market organizations that have to provide only some courses during the year therefore rent rooms in a vocational school or in a company.

Branch course training centers provide the kind of practical training that cannot easily be acquired at the workplaces because the resources needed are not available there (SBFI 2015). Because practical training “off the job” does not have the same relevance for every occupation, the duration of the branch courses varies largely between occupations, and for some occupations these courses have to be attended by learners at the beginning of a VET program, while for others it occurs later on (Wettstein and Gonon 2009, p. 175).

Branch course instructors. Branch course instructors are responsible for the practical training “off the job.” Instructors and apprentices are not bound in an employment relationship. In branch course training centers, apprentices are learners rather than workers. In contrast to the situation of workplace trainers in a host company, branch course instructors are exclusively responsible for good instruction and not to guarantee productivity. Branch course instructors provide learning environments that simulate the reality of the most relevant and representative problems and work processes. The aim is to teach very closely to practice but also to include, where necessary, theoretical concepts and to connect the skills from workplace training to what is learned in vocational schools (Wettstein and Gonon 2009). The skills that VET learners acquire in their everyday work at the host company can be more or less specific, and there can be differences in the training quality. According to Reto Catani, from SVIFET, branch course instructors teach VET learners what the “standards in practice” of a certain occupation are (personal communication, November 6, 2017).

Colleges of Higher Education

Colleges of higher education are run by cantons or private providers. For former VET students, they provide (nonacademic) tertiary schooling. Study costs are paid

Table 3 Subject areas of colleges of higher education (Erziehungsdirektion des Kantons Bern 2017b)

Subject areas of colleges of higher education
Technology
Hospitality industry, restaurant, and tourism
Economics
Agriculture and forestry
Health
Social affairs and adult education
Art and design
Traffic and transport

by students as well as by cantonal contributions that cover around 50%. For some study programs that are currently of high public value (e.g., the health sector), cantonal contributions can be up to 90% (SBFI 2017c). Approximately 8500 persons annually get qualified by colleges of higher education and often work in leading positions later on (SBFI 2017c). When they start their studies, students at colleges of higher education usually are under 25 years old which means that they often start to study only some years after they have obtained their Federal VET Diploma. In general students at colleges of higher education are employed and study part time (Schmid and Gonon 2013, p. 152). Colleges of higher education in Switzerland offer 52 different study programs in 8 subject areas (Table 3).

Teachers at colleges of higher education. Teachers at colleges of higher education in general are experienced skilled workers. They are holders of a Federal VET Diploma and have studied at a corresponding college of higher education. Teachers at colleges of higher education are responsible for supporting their students in developing methodological competences, in analyzing occupation-related problems, and in applying theoretical knowledge in practical contexts (Erziehungsdirektion des Kantons Bern 2017b).

Training of Professionals Responsible for VPET

Standardization and Quality

Even if in Switzerland VPET teacher/trainer education can have local specifics (e.g., in the different linguistic regions), in general VPET teacher/trainer education follows national standards. SERI publishes a list of all recognized providers for teacher/trainer education programs that lead to a nationally recognized teacher/trainer diploma (Table 4). Federal, cantonal, or private institutions provide a diverse selection of programs which are evaluated by SERI (yearly reporting and visits every 6 years). Workplace trainer courses are only provided by private institutions and corresponding certificates are valid in the canton that issued it. Workplace trainer courses are supervised by the cantons, with the exception of courses

Table 4 Prerequisites of VPET teacher/trainer education programs, summary of training contents, and training institutions

Prerequisites of VPET teacher/trainer education programs, summary of training contents, and training institutions
Teachers of vocational subjects
Prerequisites
PET diploma (Federal Diploma of Higher Education or Advanced Federal Diploma of Higher Education) or university degree (bachelor/master) in the corresponding teaching field
Six-month practical work experience in the corresponding teaching field
Employment at a vocational school and sometimes also teaching experience
Summary of training contents
Development of methodical competences such as how to initiate, support, and evaluate learning processes
Training institutions
SFIVET, University of Applied Science HAFL, Universities of Teacher Education (St. Gallen, Zurich, Lucerne), Federal Institute of Technology Zurich ETH
Teachers of general education subjects
Prerequisites
Teaching diploma for obligatory school or university degree (bachelor/master) preferably in a field related to general education subjects
Six-month practical work experience in the corresponding teaching field
Employment at a vocational school
Summary of training contents
Building up methodological competences of teaching general education subjects
Training institutions
SFIVET, Universities of Teacher Education (St. Gallen, Zurich)
For sport teachers with high school teacher diploma: SFIVET in collaboration with Universities of Teacher Education (Berne/Jura/Neuchâtel, Vaud, Thurgau, PHFHNW, Zurich, Lucerne), SFIVET in collaboration with the University of Fribourg
Teachers of subjects of the Federal Vocational Baccalaureate
Prerequisites
Tertiary education in the corresponding teaching field. For teaching subjects that require a university degree: high school teacher diploma or university degree bachelor/master in the corresponding teaching field
Six-month practical work experience in the corresponding teaching field
Employment at a vocational school
Summary of training contents
Knowledge of the dual VET system, understanding the working situation of learners
Training institutions
Universities of Teacher Education (FHNW, Zurich, Lucerne), University of Zurich, University of St. Gallen, SFIVET in collaboration with Teacher Universities (Berne/Jura/Neuchâtel, Vaud, Thurgau, Lucerne), SFIVET in collaboration with the University of Fribourg
Workplace trainers
Prerequisites
Federal VET Diploma in the corresponding teaching field
Two years practical work experience in the corresponding teaching field

(continued)

Table 4 (continued)

Prerequisites of VPET teacher/trainer education programs, summary of training contents, and training institutions
Training contents
Vocational pedagogy, how to support the “theory-practice transfer”
Training institutions
Private providers
Branch course instructors
Prerequisites
PET diploma (Federal Diploma of Higher Education or Advanced Federal Diploma of Higher Education) or university degree (bachelor/master) in the corresponding teaching field
Two years practical work experience in the corresponding teaching field
Employment at a branch course training center
Summary of training contents
Planning of the branch courses according to the teaching plans
Provider
SVIFET, private providers, Universities of Teacher Education (St. Gallen, Zurich, Lucerne)
Teachers at colleges of higher education
Prerequisites
Diploma of a college of higher education or university degree (bachelor/ master) in the corresponding teaching field
Employment at a vocational school and sometimes also teaching experience
Summary of training contents
Andragogic methods, support of the “theory-practice transfer”
Training institutions
SFIVET, Universities of Teacher education (St. Gallen, Zurich, Lucerne), Federal Institute of Technology Zürich ETH

For foreigners it is possible to apply for the recognition of their diploma by SERI that recognizes diplomas if they are equivalent to corresponding Swiss diplomas (VPETO Art. 69, portal of the Swiss government 2017b).

provided by large labor market organizations such as “Swissmem” or VSSM, which are supervised by SERI because they operate at a national level (SERI 2017d). Research in Switzerland supports the development of VPET teacher/trainer education. Changing conditions in the framework of VPET that are aligned to changes in the labor market require constant adjustment and updating. According to Barbara Grob of SFIVET, for example, some structures of the teacher education for VET sport teachers are being changed (personal communication November 2, 2017).

Institutions of Teacher/Trainer Education

The implementation of a new act on vocational and professional education in 2004 set off several processes. Former institutions for teacher education in Switzerland

were restructured to be “universities of teacher education,” and some of them started to offer VPET teacher/trainer education programs. As can be seen in Table 4, regular universities are also involved in VPET teacher education. The former institution for VPET teacher/trainer education, called Swiss Pedagogical Institute for Vocational Education (SPIVE), was restructured in 2006 and today is called the Swiss Federal Institute for Vocational Education and Training (SFIVET). SFIVET, under contract to the government, provides teacher/trainer education programs for all professionals responsible for VPET (with the exception of workplace trainers), a variety of courses for further training (*Weiterbildung*) in the VPET sector (such as courses for examination experts and leading staff), a research/development center for VPET, and a master’s program (MSc) in VET. Many collaborations have been established between SFIVET and several Swiss universities of teacher education as well as with cantonal universities and international partners.

Structural Characteristics that Support the Linkage of Theory and Practice

The linkage of theory and practice of VPET in Switzerland is facilitated by a particularity of the teacher/trainer education. Professionals responsible for VPET can study toward a “teacher/trainer as a second job” designation (*Lehrperson im Nebenamt*). After studying in this pathway, they can teach/train “as a second job” (work quota 1–50%). This is different from regular part-time employment. Whereas, for example, a regular teacher can work part time or full time as a teacher, teachers/trainers that have completed the “teacher as a second job” profile are only allowed to work 50% or less as a teacher/trainer. They continue working as regular workers in industry, which allows them to include their up-to-date knowledge of the developments in the world of work in their teaching, which helps them to support VPET learners in linking theory and contemporary practice. For teachers and trainers who teach full time, it can be difficult to hold their professional knowledge up to date, a problem that can lead to legitimacy issues.

Because in Switzerland the linkage of theory and (contemporary) practice is considered to be of utmost importance, to study in these profiles is attractive: compared to the profiles that lead to “teacher/trainer on a full-time basis” (*Lehrperson im Hauptberuf*, possible work quota 1–100%), they require less time (see Table 3). The study profile “teacher/trainer as a second job” is only available for a part of the professionals responsible for VPET: teachers of vocational subjects, branch course instructors, and teachers at colleges of higher education (see Table 3). For teachers of general education subjects and for teachers of subjects of the FVB, up-to-date skills and knowledge of developments in industry are less important. They can only study in the profile “teacher on a full-time basis” (see Table 3). Most recent statistics show that around 42% of all teachers employed at VET schools work less than 50% as a teacher (Bundesamt für Statistik 2014).

Dimensions of VPET Teacher/Trainer Education

Theory and practice. According to Reto Catani, SVIFET, to be well trained after a VPET program and to be “professionally competent” means that a person does know what to do and also knows why he or she does it this way (personal communication, November 6, 2017). Professionals responsible for VPET support the development of VET learners’ professional competences, which requires comprehensive learning beyond separately taught subjects (SBFI 2015, p. 5). Professionals responsible for VPET have to be educated so that they are able to refer to the context of practical work, e.g., by including learners’ work-related experiences in class, and simultaneously are able to familiarize young learners with the essential theories that help them to better understand, plan, and carry out their work (SBFI 2015, p. 5). Theory and practice can be integrated in teaching/training through the concept of “situated learning” or “problem-based learning.” Applying these concepts, a teacher organizes teaching and learning processes from the perspective of relevant work situations or work-related problems. “Real-life work situations” or problems are addressed with knowledge and theories to encourage a linkage of theory and practice.

Collaboration of colleagues at the different learning venues. Of main importance for the quality of VET in Switzerland is the coordination of the learning at the three different learning venues: vocational school, host company, and branch course training center. If it functions well, students can profit from learning in different environments and from the accumulated knowledge of the teachers/trainers involved. VET teacher/trainer education therefore aims at developing the teachers’ and trainers’ ability to cooperate with colleagues at the different learning venues (SBFI 2015, p. 5). It is, for example, vital that all teachers/trainers involved know and understand the different learning environments their students are confronted with. Only if they understand the learning situation of learners and their level of education can they address them accordingly and effectively support their learning process. How to build bridges for the learning among the three learning sites (e.g., through media usage such as iVideo or REALTO) is also a particular concern of research (e.g., Cattaneo and Sauli 2017; Aprea et al. 2012).

Pedagogy and andragogy. VPET teacher education in Switzerland aims to pass on pedagogical approaches as well as andragogic approaches to future teachers and trainers. Since at the start of their VET programs, young learners on average are around 16 years old, VET teachers/trainers have to act as general educators and need pedagogical knowledge (Hensen-Reifgens and Hippach-Schneider 2015). During the 3 or 4 years that regular VET programs take, young learners get more independent and start to manage their own lives as adults. For the professionals responsible for VET, this means that in this time, they have to start to address young learners more as adults and apply andragogic approaches. How this transition toward adulthood, the first steps toward financial and social independence of VET learners, has to be reflected in the teaching is a core theme of VET teacher/trainer education (SBFI 2015, p. 5). It can be summarized, that, within the progress of a VET program, young learners have to be supported to take over the responsibility for their learning progress. Teachers therefore, for example, can provide the opportunity of self-regulated studying.

Prerequisites to Be a Professional Responsible for VPET

VPET teacher/trainer education programs in Switzerland are short, but they all build on specific prior experience and qualifications and are addressed to existing specialists. Specialists (some in technical occupation specific subjects, some in vocational subjects, some in general education subjects) are trained in relatively short programs on how to use their knowledge or skills to teach/train learners in VPET.

Table 4 shows which prerequisites for the different education programs are requested (which specialists the programs are addressed to). What is common for all profiles is that students have to have at least some experience in the industry, i.e., work (not teaching) experience for at least 6 months (see Table 4), which is supposed to facilitate the connection of theory and practice in their teaching. Table 4 also gives a summary of the basic contents of each program to show what the different “specialists” additionally are trained in to become a professional responsible for VPET. As can be seen in Table 4, the backgrounds required for the different profiles are diverse and (future) professionals responsible for VPET are a heterogeneous group. The diversity of backgrounds of teachers and trainers leads to a vocational and professional education and training that is strong in developing practical skills as well as strong in developing general subject knowledge.

Recruiting Professionals Responsible for VPET

Several factors contribute to successful recruitment of professionals responsible for VPET.

1. As can be seen in Table 4, enrolling in training programs for professionals responsible for VET (with the exception of workplace trainers) is only possible if a candidate is already hired by a vocational school or a branch course training center. The recruitment of the professionals responsible for VPET is carried out by vocational schools and branch course training centers where the “best candidates” (most suited regarding subject knowledge, practical experience, personality, and social skills) are selected before they attend teacher/trainer education (Hof et al. 2011, p. 2). This increases the number of people who are eligible to apply for open positions. For example, all skilled workers with 6-month practical work experience that have an (Advanced) Federal Diploma of Higher Education can apply for a job as a teacher of vocational subjects. If they have 2 years of practical work experience, they can also apply for a job at a branch course training center. All teachers for obligatory school or high school and persons with a university degree in the corresponding teaching field can apply for vacancies at vocational schools.
2. The work of professionals responsible for VPET can be considered to be attractive. Pay is at least equal to industry for teachers/trainers that work at branch course training centers or vocational schools (Hof et al. 2011). The wage of teachers at vocational schools is equal to regular teacher wages (D-EDK

Deutscheschweizer Erziehungsdirektoren- Konferenz 2017). At vocational schools such as at every public school in Switzerland, in general, teachers (in one canton) have the same wage, regardless of their previous career or background (Hof et al. 2011, p. 3).

3. Teacher/trainer education is based on previous education and work experience of candidates. The additional training of professionals responsible for VPET can be completed with relatively low expenditures, for example, 600 learning hours (20 ECTS) for the certificate to be a trainer at a branch course training center on a full-time basis or 1800 learning hours (60 ECTS) for the certificate to be a teacher of vocational subjects on a full-time basis (see Table 4), which leads to regular teacher status and a high wage. Teacher/trainer education programs only have to be completed in the first 5 years of working as a teacher/trainer, which means that for the completion of teacher/trainer education programs, an ideal time can freely be chosen (Vocational and Professional Education and Training Ordinance VPETO Art. 40, portal of the Swiss government 2017b). If professionals responsible for VPET work less than 4 h per week on average (around 160 h in a year) as a teacher/trainer, they legally even are not required to complete a teacher/training education program at all (VPETO Art. 47, portal of the Swiss government 2017b).

Challenges and Criticalities Within the Approaches to Teacher/Trainer Qualification

Workplace training builds the major part of most VET programs, and therefore the quality of training on the job is of utmost importance. However, workplace trainer education is very short (100 learning hours, 3 ECTS), and their certification is not nationally regulated. Higher requests on the training of workplace trainers could hamper company engagement in VET training. As a result of these minimal regulations, the quality of workplace training can differ widely between companies. For learners in VET, this means that quality training is not always assured. This is also discussed against the background of relatively frequent cancellations of VET contracts (10–40%, depending on the occupation), which is related to high individual and collective expenses (Schumann et al. 2015, p. 2) (After a cancellation of a VET contract, most of the young learners do not drop out of the VET system completely, but start a new program or start/continue in a new company (Schumann et al. 2015, p. 2).).

In comparison with the neighboring country Germany, VPET teacher education is quite a bit shorter. (Ongoing) practical work experience is higher valued than academic credentials and academic learning in the teacher education program. VPET teachers often start working without a specific pedagogic qualification and acquire pedagogic skills later on while working. This can have implications on their teaching quality and raises questions in respect to the readiness of teachers to develop their own teaching material, adjust to new curricula, respond adequately to the large variety of classroom management situations, etc. However, the persisting

argument in defense of the design of VET teacher education programs is that work experience is largely relevant and provides credibility in the classroom. “Learning by doing” is a persisting Swiss narrative which permeates VET teacher education and teaching practice as well.

In Switzerland teachers for around 230 occupations have to be educated. The challenge is that teachers of vocational subjects need general pedagogical knowledge and knowledge how to teach aspects of a particular occupation. Today the teaching methodology of all of these occupations is not systematically elaborated. To find an adequate teaching methodology for a specific occupation, teachers of vocational subjects often refer to their own experiences as a learner and worker in the field; they sometimes refer to related academic subjects and teaching methodologies, or they simply rely on general methods and approaches and apply them to the occupation they teach. It is an ongoing exercise for teachers of vocational subjects to find adequate solutions to balance the situation.

Conclusion and International Perspectives

Successful and well-considered recruitment of professionals working within VPET is essential for high-quality VPET, especially to maintain a high connectedness of VET to the labor market. It can be assumed that it is only possible to find good practitioners to teach the future skilled workers if working as a professional responsible for VPET is attractive and if getting there is not too demanding. In the Swiss context, equal conditions of work as a teacher/trainer to industry and to regular teaching and the low training expenditures contribute to the fact that it is possible to recruit talented, experienced, and successful practitioners for teaching and training in VPET. Programs of VPET teacher/trainer education are short. The programs build on prior knowledge, experiences, and corresponding certificates and only cover the contents that the different “specialists” additionally need to use their prior knowledge and skills to successfully teach in VPET. Because the VPET teacher education programs are short, research to increase the quality and quality assurance are of utmost importance as well as the possibility to develop and adjust structures where needed.

Various publications have addressed the possibility of policy transfer between countries in respect to teacher education (e.g., Barabasch and Watt-Malcolm 2013; Dehmel 2011; Grollmann 2005; Steiner-Khamsi 2015). Particularly relevant is the topic for the European Union, signified by a large number of publications released by Cedefop (2014, 2015). The Swiss education for teachers and trainers takes a unique approach that could be a model for various countries with an interest in applying an affordable and pragmatic approach to quality training for VPET teachers and trainers. In contrast to its neighboring country Germany, Switzerland’s VPET teacher education is mostly not based at regular universities but instead provided by various universities of teacher education. Although academic in nature, it largely builds on practical expertise, which is highly valued. VET teachers often come with a wealth of acquired work experience and are skeptical of theoretical content brought across within higher education. They enforce quality training with their critical

questions and expectations toward the “usefulness” of the knowledge delivered in teacher/trainer education programs. In this way universities of teacher education are constantly challenged to provide an education that serves the particular needs to this target group and strongly builds on applied research and practical content and on building strong bridges between the world of work, the world of VPET education, and prior knowledge and experiences of the VPET teacher. Additionally, there is the possibility for VPET teachers to choose between part-time or full-time teaching for which different conditions apply. This flexibility is attractive to many practitioners, who either have a strong intrinsic interest or need to compensate their existing income. With this possibility a strong ongoing relation to practice is ensured while at the same time making the profession of VET teacher or trainer much more attractive to a large group of workers.

For all the reasons mentioned above, the Swiss approach to VPET teacher and trainer education has much to offer and can be considered as a potential model for policy transfer or policy borrowing. More systemic comparisons between countries’ approaches to it would be needed, especially within Europe, where making the profession more attractive has been a policy concern over many years. An open question that remains for the system, however, is to what extent the relative small amount of academic education within teacher education programs in comparison with their German counterparts, for example, will be sufficient in the future.

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