

# Chapter 4

## Varieties of “Duality”: Work-Based Learning and Vocational Education in International Comparative Research



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**Abstract** This contribution argues that vocational learning is always bound to more school-based learning settings and practical work contexts. The focus on dual vocational education systems as a specific type of a national vocational education regime has led to overlooking the general “dual nature” of any vocational education and training.

Often vocational education practice goes beyond a mere *orientation towards work* by making *practical work experience part of the vocational education and training curriculum*. Yet even in cases of purely school-based settings, the question remains on how far the learning experiences of individuals from school-based instruction match with what they would be required to do in their future jobs and the learning experiences they engage in. Instead of asking how work experience integrates with education, it might also be legitimate and important to question *how educational experience is or can be integrated into work*.

On the other hand, the widely used term “work-based learning” does not sufficiently address the relevant contextual conditions for understanding the integration problem tackled in this volume. “Work-based learning” will always be strongly shaped by local or national institutional contexts in forms and content, and it only turns into education as soon as there is some kind of “curricular” formalisation and/or acknowledgement. By looking at international educational statistics and comparative research, the contribution in this chapter will show that the “dual nature” could be depicted better by taking into account education as well as employment statistics at the system level. The contribution also discusses where statistics could be misleading. In addition different forms and concepts of dual vocational education and training and practical examples are presented. Conclusions are drawn for further research on curricular integration for a variety of dualities.

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## Increased Attention to Dual Forms of Vocational Education and Training

Two contextual developments are worthwhile to take into account when looking at the combination of vocational education and work-based learning on an international scale. One is the general interest of research on vocational teaching and learning including issues of integrating learning experiences in schools and colleges with those made at work, and the other is the increasing international interest in dual forms of vocational education provisions.

### *Integration of Work and Learning*

Over the last 20 years, research literature on vocational education and training on an international scale has increased significantly, exemplified by the development of a number of journals and basic publications (e.g. Maclean u.a. 2008; Malloch u.a. 2011; Rauner and Maclean 2007).

It is universally recognised that a specific characteristic of vocational education and training relates to the world of work or practice. Often vocational education practice goes beyond a mere *orientation towards work* by making practical *work experience part of the vocational education and training curriculum*. But even in cases of purely school-based settings, the question remains on how far the learning experiences of individuals from school-based instruction match with what they would be required to do in their future jobs and the learning experiences they engage in.

At the curricular level the question is how well work experience contributes to achieving defined educational goals. At the individual level, the question is to what extent can different learning experiences in the world of education and the world of work be combined by individuals into something that supports the competent, skilful and meaningful execution of work tasks. Such fundamental questions of research on education and training have been investigated and discussed under varying labels and with different substantive and conceptual focus such as “connectivity” (e.g. Griffiths und Guile 2003), “integration” (Stenström and Tynjälä 2009) and “transfer of learning” (cf. respective chapter in Bransford 2004). Although such approaches usually recognise the significance of context, they are strongly rooted in an educationalist or psychologist view on teaching and learning processes that does not spe-

cifically look at the contextual conditions and yet might have a considerable effect on the examined teaching and learning practices and desired outcomes.

Such conditions could be the institutional framework in which vocational teaching and learning take place and the relative meaning that different learning experiences and outcomes could potentially have in different environments. For instance, different national labour markets are also related to different employers' expectations of skills and competences that workers should have acquired before or when entering employment.

Some approaches to situated or organisational learning have stressed this level of analysis. What is important here is that these approaches often look at the knowledge that is generated in those settings as a quality of its own in contrast to other forms of knowledge that are central to school-based instruction (Boreham u.a. 2002; Fuller and Unwin 2003; Lave and Wenger 1991).

Instead of asking how work experience is integrated within education, it might also be a legitimate and important to question *how educational experience is or can be integrated into work*.

However, comparative research on vocational education and training is strongly dominated by system-oriented analysis, which is mainly looking at national types of vocational education and training. Often the background of this analysis is influenced by political science and respective research paradigms. Increased attention was, for example, given to different models of governance of skills and vocational education and training policies over recent years (Greinert 1995; Greinert and Hanf 2004; Pilz 2016; Trampusch and Busemeyer 2010). Another strand of research has emphasised the significance of skill formation for economic performance and competitiveness of industrial states (e.g. Hall and Soskice 2004).

In that sense, there is a gap in research on the level that is exactly in between teaching and learning process and their effects on the one hand and the level of national systems on the other. This gap has also been tackled in other recent publications on comparative research in vocational education and training (e.g. Pilz 2016).

## **Emphasis on Dual Vocational Education and Training in International VET Cooperation**

Several European countries that traditionally have school-based training models have announced an intention to introduce dual training structures.

However, the basic momentum for this is not necessarily the interest in integrating vocational education and work-based *learning* but the observation that national systems of vocational education that are based on dual structures are performing better with *integration of young adults into the labour market*. However, there are debates about the efficacy of transferring dual VET models.

## *The Debate Around Transfer of Dual VET*

The objectives for a dual VET model are also being driven by the European Commission, which has launched a number of initiatives to support this fundamental realignment of vocational education and training policy in Europe (Organisation for Economic Co-operation and Development 2014a, b; Steedman 2012). In connection to this relatively new policy, there is increased attention on the question of how well dual educational practices or even systems can be transferred from one country to another.

Dual VET structures are often linked to a complex nexus of labour market institutions, political control structures and culturally shaped concepts of vocational training (Ertl and Frommberger 2008; Georg 1990, 1996; Grollmann 2008). In his study drawn up for the Bertelsmann Foundation, Dieter Euler (2013) identified 11 constituent elements of dual vocational education and training which in his view are better suited to the transfer debate than a whole system. He is right to point out that the evaluations conducted over several years by the German Agency for International Cooperation (GIZ) show that effective and sustainable transfer of the German dual vocational education and training system is not possible (Stockmann 1998, 2000). There are the following reasons for the limitations of transfer:

1. Vocational education and training systems are complex fabrics which have grown historically. Structures established since the Middle Ages have developed further on an ongoing basis and been adapted within the process of industrialisation and the development of national states (Georg 1996; Greinert and Hanf 2004).
2. Complex correlative effects arise between the labour market, company organisational and human resources development and the educational system (cf., e.g. Maurice and Sorge 1990; Maurice u.a. 1982). These overall follow a separate logic tending to exhibit an evolutionary character rather than that of a rationally planned structural process (cf., e.g. Schriewer 1986).
3. In the policy development process, vocational education and training usually occupies various institutionalised political areas between education and employment. Even if there is a high degree of readiness to implement dual solutions in vocational education and training, VET policy needs, for example, to take place in a cross-departmental manner.
4. The idea of the transfer is frequently based on concretist notions regarding what is actually being transferred and how this process functions. Specific things or institutions cannot be the centre of attention here. At best, the focus is on knowledge of such things or institutions, which is then deployed in practical and political structural processes. Research on vocational education can play an important role in exploring, producing and making this knowledge visible.

With regard to the question of transfer, it is apparent that we should also look at smaller social units rather than dealing exclusively with “systems”. Euler (2013), for instance, has proposed “Alternating learning situations in accordance with the dual principle” (Euler 2013: 30–35) as one 1 of 11 constituent elements.

**Table 4.1** Prerequisites for and barriers to successful transfer

Content of policy	General conditions similar	General conditions different
Global problem definitions and solution strategies	(1) Possibility of learning is high	(2) Consensus deficits (no transfer)
Specific programmes and concrete instruments	(4) Efficiency deficits (technical problems)	(3) Probability of diffusion is low

Source: Schmid (2010: 479)

It is difficult to predict what effects the adaption of a single or a few of the “constituent elements” will have, since the way in which dual vocational education and training structures works is, at least at the systems level, presumably based precisely on the interplay between individual components. Aspects such as costs/benefits need to be considered in conjunction with contents and forms of human resource development and work organisation and stipulations in employment law or collective wage agreements. A partial transfer of only some of the 11 “constituent elements”<sup>1</sup> of dual vocational education and training (Euler 2013, p. 7) shows as limitations and will permit also only limited achievement of (systemic) effects. In any case 10 of the 11 constituent elements constitute a general condition for effectiveness of the remaining constituent element.

### *Transfer in Political Sciences*

Vocational education and training is not the only area in which it is well known that complex institutional interweaving of this kind cannot simply be transferred from one country to another (Schmid 2010). The possibility of transferring policy and societal institutions is a recurrent issue in political science. Schmid (2010) and Klenk (2013), for example, point out that a transfer can only occur under one of the four possible combinations of general conditions and political contents, namely, if general conditions between the cooperating countries and “global learning objects” are comparable. In the three other constellations, a transfer of systems (or system components) is stated to be impossible or “doomed to failure”. Table 4.1 summarises the prerequisites for and barriers to successful transfer.

<sup>1</sup>The 11 “constituent elements” according to Euler are (1) broad objective, vocational training as a means of achieving economic, social and individual goals; (2) the main objective of vocational training, to produce skilled workers with flexible qualifications who are mobile and capable of working in their chosen fields; (3) alternating learning situations in accordance with the dual principle; (4) vocational training as a task to be carried out in partnership between the government and the business community; (5) joint funding of vocational training; (6) complementary programmes run by schools or nonbusiness entities; (7) codifying quality standards; (8) qualifications of teachers and training personnel; (9) balance between standardisation and flexibility; (10) creating a solid basis for decisions and design; and (11) social acceptance of vocational training.

Cooperation in vocational education and training usually encounters highly different general conditions, and, if we take the idea of a one-to-one transfer of the dual systems in German-speaking countries as our starting point, we need to deal with a highly specific and concrete design concept. In order to tap into the opportunities offered by transfer, it therefore seems important to us to abstract from the specific nature of the solution (as “dual systems”) in German-speaking countries and also to consider the general conditions. “Alternating learning situations in accordance with the dual principle” might be a solution; however, those situations are highly inter-related with contextual conditions. Therefore, it might be useful for the international dialogue to further pin down a number of scenarios of this practice that are different, conceptually and empirically.

## **Terms in Use in the International Dialogue<sup>2</sup>**

In this section I would like to systematise and present some terms and concepts that are in use within the international discourse and that can be built on in order to come up with the kind of “global learning objects” that are appropriate for an international discourse on “duality”.

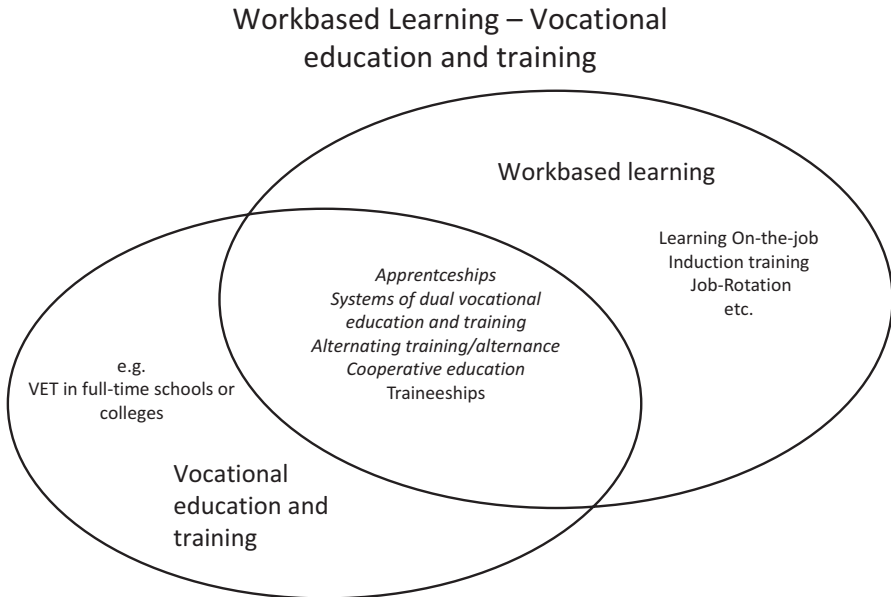
Especially against the background of the urgent problem of high youth unemployment and of precarious employment situations in numerous countries, a series of international organisations have been looking at forms of dual vocational education and training over recent years (European Commission u.a. 2013; Organisation for Economic Co-operation and Development 2010; Steedman 2010) and are continuing to work on relevant international projects and concepts up to the present day. Important terms that constantly arise in this debate are traineeships and apprenticeships and “work-based learning”. Are these then suitable as “global learning objects”?

### ***Vocational Education and Work-Based Learning***

International organisations have taken up the term “work-based learning” (European Commission 2015; Organisation for Economic Co-operation and Development 2010, 2014b). However, this does not necessarily need to happen in a formalised environment of vocational education and training. In principle work-based learning can happen anywhere and at any time. Its major definite criterion is that it takes place during work. Examples for rather informal structures of work-based learning that are not directly connected to vocational education are practices of learning at work such as job rotation or mentoring at work. It shows how loose the term is and

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<sup>2</sup>Parts of this section are a revised, updated and expanded version of a contribution to the BIBB Data Report on VET 2014 (Grollmann and Helmrich 2014).



**Fig. 4.1** Work-based learning and vocational education as set theory

how strongly it might be associated with different cultural and institutional concepts and understandings.

On the other hand, we have the world of education and training that usually is associated to formalised learning settings in educational systems. Especially, when those two sets overlap, one can think about how to support the integration of learning experiences that are made by individuals between the two (see Fig. 4.1). Based on the analysis of practices in different countries, I would like to elaborate on terms and concepts that are in use in the international discussion and a number of practices that we find in different national contexts.

### ***Work-Based Learning***

Both the EU and the OECD have embraced the term “work-based learning” (WBL) within the context of discussions. One major feature of this term is that learning in the workplace actually takes place everywhere, no matter how the educational system is shaped. WBL is thus sufficiently non-specific to be applied across a wide range of national and international contexts. The OECD has consequently given a current project the title of “work-based learning in VET” (Organisation for Economic Co-operation and Development 2017), thus making it clear that the focus is on learning in educational programmes. This is not self-evident if we look, for example, at training traditions in which much of the learning also occurs during the work

process but does not commence outside the formalised educational system until an employment career has been embarked upon (cf., e.g. Demes and Georg 1998). The OECD also uses the term in international educational statistics to categorise vocational training courses. According to the OECD measurement concept, “combined school- and work-based programmes” are defined as follows:

In combined school and work-based programmes, instruction is shared between the school and the workplace, although instruction may take place primarily in the workplace. Programmes are classified as combined school and work-based if less than 75 per cent of the curriculum is presented in the school environment or through distance education. Programmes that are more than 90 per cent work-based are excluded. Combined school and work-based programmes are programmes in which both elements are part of an integrated formal training course. (Organisation for Economic Co-operation and Development 2016: 289)

## *Traineeships*

In connection with two studies conducted for the European Commission (European Commission u.a. 2012; European Commission und IKEI 2012), an investigation was undertaken of the various forms of company-integrated training and of traineeships in the European member states. Following the study, a public consultation was held on the quality of traineeships/internships, and this was then used to inform a recommendation for a European framework for traineeships. So-called “apprenticeships” (company-based VET contracts) have been excluded since the assumption is that sufficient regulations are already in place (Council of the European Union 2014).

The fundamental finding is, however, that both forms, in particular company-based VET, occur in many countries and not merely in the so-called dual systems. In order to facilitate better delineation of the two terms and associated concepts, the following model comparison was developed in connection with the study of traineeships in Europe. This makes it apparent that the term “apprenticeship” is more narrowly defined and regulated with regard to many different aspects. An overview on the differences between apprenticeships and traineeships according to this study can be found in Table 4.2.

Whereas the aim of company-based vocational education and training (apprenticeship) is usually for a professional or vocational qualification, a traineeship may fulfil many different functions. The smallest common denominator is normally a focus on recording and documenting practical experiences. The term traineeship, however, does not define at which level of the educational system training takes place. Traineeships range from vocational orientation placements at secondary school level to internships in the higher education sector or even post-graduation. Whereas this means that either no regulations or very few and various minimum standards apply to trainees with regard to status and remuneration, VET apprentices are considered to be employees and are regulated accordingly. Dual VET contracts



**Table 4.2** Company-based VET (apprenticeship) and traineeship

	Company-based VET (apprenticeship)	Traineeship
Scope	Full qualifying professional or vocational education and training	Complementing educational programme or individual CV
Goal	Professional profile/qualification	Documented practical experience
Educational level	Usually EQF level 3–5	Traineeships can be found as part of programmes on all EQF levels – common forms in (pre-)vocational education, in higher education and after graduation (sometimes compulsory)
Contents	Acquisition of the full set of knowledge, skills and competences (KSC) of an occupation	Vocational and/or work/career orientation, acquisition of parts of competences, knowledge and skills of an occupation or a profession
On-the-job learning	Equally important to coursework	Usually complementing coursework or optional extra
Time frame	Determined, middle to long term (up to 4 years)	Varying, short term to middle term (frequently less than 1 year)
Employment status and compensation	Contracted/employed apprentice. Remunerated – amount collectively negotiated or set by law	Trainee/pupil/student often based on an agreement with employer or school. Varying remuneration, often unpaid
Governance	Regulated, often on a tripartite basis	Unregulated or partly regulated
Stakeholders	Social partners, training providers, state	Individuals, companies, state, educational institutions

First printed in: European Commission, K. P. Hadjivassiliou, et al. (2012). Study on a comprehensive overview on traineeship arrangements in Member States. Final Synthesis Report. Brussels, Institute for Employment Studies, Istituto per la Ricerca Sociale, Federal Institute for Vocational Education and Training. Slightly modified by the author

are usually to be found at secondary level or as part of post-secondary training programmes in some instances. In some exceptional cases, the term is even used to refer to dual forms of higher education with a company-based training contract (such as in Italy or France).

The term “traineeships” is, then, presumably too unspecific as a “global learning object”. The term “apprenticeships”, however, may be too specific.

“Apprenticeships”, i.e. regulated company-based vocational education and training contracts, exist in many countries, including, for example, the USA and Canada. These are frequently domiciled in the post-secondary training segment or in continuing training. Some programmes are company based only and not always governed and controlled by representatives of labour and/or employers. They may prescribe “upgrading training” in the form of “on-the-job” and “off-the-job” learning, i.e. alternating learning during the work process and supplementary teaching. One major difference in the German dual VET system is the age of the trainees,

which is usually between 25 and 39. These programmes are notionally regulated in the USA and Canada by the Ministry of Labour. In Canada, they form part of the “adult education” sector.

Another country in which “apprenticeships” are even more widespread without being aligned to the secondary school system is Australia. Extended dual VET takes place in the form of “apprenticeships” and “traineeships” which are, however, domiciled within the post-secondary educational segment (Grollmann and Smith 2007).

In some countries, a form of vocational education and training similar to the German dual system exists in a small number of occupations only (such as in France, cf. the figures) or in Italy and Belgium as a specific regional feature (e.g. South Tyrol or the German-speaking part of eastern Belgium). Further forms and types of systematic integration of company-based learning into vocational education and training are presented in the following sections (cf. Grollmann 2012).

### ***Systems of Dual Vocational Education and Training***

When speaking of the duality as regard to the VET system, experts in Germany, for example, comprise a complex construct which is particularly aligned to the formal stipulations of the German education system and to the Vocational Training Act. The existence of a Vocational Training Act and of a training contract, para-governmental monitoring of VET by the chambers, and integration into the upper secondary school system (vocational school) are always part of the thinking in this regard.

Company-based vocational education and training integrated at upper secondary level in the educational system, which is of high quantitative significance and is combined with a specific employee status (company-based training contract), is an exception when considered in international terms. The countries which possess an established “dual system” of this kind are Germany, Denmark, Austria and Switzerland. Nevertheless, the quantitative significance of this form of vocational education and training varies between these systems (cf. figures in the next section).

### ***Alternating Training/Alternance***

There are also instances of the coexistence of dual VET (company-based vocational education and training in the educational system) and school-based VET incorporating longer practical phases such as placements. The form of “alternance” or alternating training follows this model. Phases of scheduled teaching blocks at school alternate with phases of company-based practical training of varying length. This form of dual learning is most prevalent in VET systems which are more school-aligned, such as in France (2005) or Finland. In overall terms, the quantity and duration of such practical placements are on the increase.

### ***Cooperative Education***

The “cooperative education” model is frequently encountered at the post-secondary level of the educational system, such as at community colleges in North America. Cooperation in this case is initiated locally between companies and educational providers (a college or university) and is not governed by any kind of nationally regulated and institutionalised duality. Incentives include competition with providers of similar training courses and the intention of demonstrating the labour market relevance of a programme or increasing the practical relevance of the training in a clearly comprehensible manner. Further incentives may arise for the institutions on the basis of financial advantages via contributions from trade and industry or local tax monies. No training contract is usually entered into between the company and the trainees (Grollmann and Lewis 2004). Because such arrangements have their foundations in a particular degree of commitment at local level, very little reliable and secure data is available on this form of cooperation.

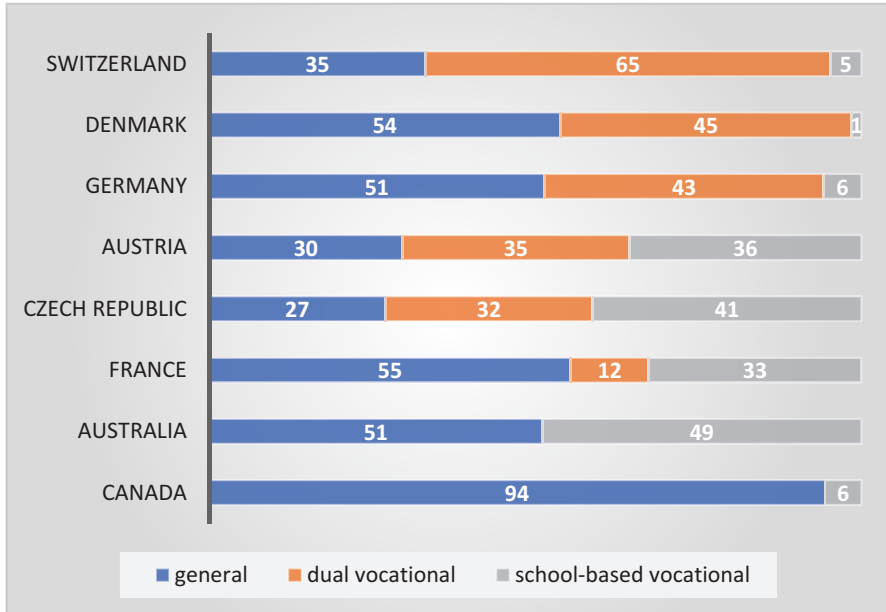
Data and information which are available on the various types of dualised vocational education and training are presented in the following section.

### **International Comparative Data on Dual Forms of Vocational Education and Training**

The following chart shows the amount of work-based learning as a proportion of vocational education and training at upper secondary level for a number of selected countries. In Belgium, for example, the reason for the proportion of dual training contracts is 3% is that dual training exists in the German-speaking community in the East, whereas training in the rest of the country is otherwise largely organised in school-based form. France and the Czech Republic are typical examples of countries that have full-time school-based vocational education and training systems in which company-based learning also represents part of the curriculum. The proportion of practical learning is, however, far below the level in the dual VET systems of Germany, Denmark, Austria and Switzerland. The OECD concept for “combined school- and work-based programmes” requires a proportion of company-based learning of at least 25% for programmes to be allocated to this category.

In the Czech Republic, this practical element of training usually takes place in special school-based training workshops rather than at companies. The school-based part of training is supplemented by practical placements (Refernet Czech Republic 2012). Figure 4.2 shows the proportion of students enrolled in VET and general education programmes in upper secondary schools. In addition school-based and work-based VET settings are differentiated.

In France, 12% of training is deemed to be company-based VET (Centre d’analyse stratégique 2013). A further 33% may, however, certainly include practical placements at companies.



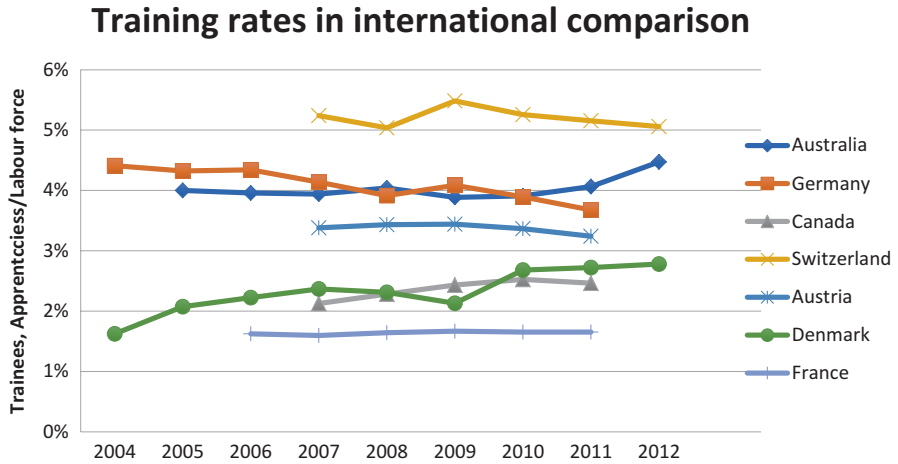
**Fig. 4.2** Proportion of pupils at upper secondary level in vocational and general educational programmes

Note: Included are programmes leading to qualifications aligned to ISCED level 3 (a, b, c). When comparing the data, it must be taken into account that the length of educational programmes varies internationally (e.g. 12 or 13 years of schooling, compulsory education until the age of 16 or 18). Ascription of data is made by national statistical offices according to criteria developed with OECD

Source: Organisation for Economic Co-operation and Development (2013, 271)

Work-based learning has a high degree of quantitative significance in the dual vocational education and training systems in Germany, Denmark and Switzerland. It is noticeable that the proportion of work-based training in Austria is relatively low. The reason for this is the existence of very well-established school-based vocational education and training which afford the opportunity of a double qualification (VET and higher education entrance qualification). In all cases of dual vocational education and training, however, practical training at the company is the norm, whilst instruction at school-based training institutions constitutes the exception.

Figure 4.2 also includes data for Canada and Australia. In Canada, VET at upper secondary level is virtually non-existent (Grollmann und Wilson 2002), hence no dual vocational education and training is shown. By way of contrast, the proportion of vocational education and training in Australia is 49%. Notwithstanding this, the OECD data does not provide any information on the proportion of dual VET in Australia.



**Fig. 4.3** Trainees as a proportion of the labour force (training rate) 2004–2012

Source: Labour force data is from the *ILO database (ILOSTAT)* and is based on national labour force surveys. Data on training contracts is taken from *national statistical offices*. All used data is available online at the webpages of the responsible organisations. Deviations to the German training rate stated in the Data Report to accompany the Report on Vocational Education and Training are the result of the different denominator used. Here, this is the “labour force”, whereas the national calculation for Germany is based on “employees subject to mandatory social insurance contributions”

## International Comparative Data on Formal Company-Integrated Training

Vocational education and training with proportions of company-based learning typically takes place following completion of upper secondary level education and is aligned to continuing training (Steedman 2010, 2012). For this reason, it is also useful to look at company-based VET as a proportion of employment (Robinson 2001). In Germany, this “training rate” is calculated on the basis of the number of trainees as a proportion of all employees, subject to mandatory social insurance contributions. We have also followed this calculation to determine the training rates for other countries. Nevertheless, the organisation of contracts of employment is subject to considerable national differences. The working population has therefore been selected as the denominator for the purpose of this comparison. Labour force information is taken from ILO figures, and information regarding company training contracts is based on data from national training statistics. The apprenticeships endure very specific regulations and arrangements in terms of contents and forms (see above and the following country examples). Figure 4.3 shows trainees as a proportion of the labour force.

If this indicator is considered, then Australia, for example, certainly forms an object of interest in that the rate exhibited is nearly as high as in Germany (AUS, 4.0%, and DE, 4.2%, in 2008). This magnitude is, however, not mapped in the international education statistics from the OECD or UNESCO.

## **Practices of Company-Integrated and Dual Vocational Education and Training in Different Systems**

Examples of the differing structure of dual VET practice are presented below on the basis of important core characteristics. Particular characteristics are highlighted for each country.

### ***Denmark***

Denmark has a dual system of vocational education and training. The particular characteristics of the Danish system are a dual VET levy and the special status of the schools. The Danish vocational schools integrate functions that are divided between different actors in other dual systems. For example, they are not only responsible for the design of school-based part of the programme but also for administrative and strategic functions on the regional level. Assuring the quality of work-based learning and maintaining the register of training enterprises are also part of their mandate. They act as central points of contact at a regional level for the implementation and governance of vocational education and training.

In Denmark, each company pays into a vocational education and training fund depending on the number of employees it has. There are a total of four possible different kinds of training contracts. These are a “normal” training contract with a company within the scope of dual training arrangements, a contract concluded with a company prior to commencement of basic vocational training, shorter-term contracts with different companies and a contract with a school to replace a company-based training contract (Buske and Grollmann 2010).

### ***France***

The number of apprentice contracts (apprentissage) in France has doubled since the 1980s, as a result of various reforms (Berger und Mouillour in Vorbereitung). One particular characteristic in France is the possibility of also completing apprentice training within the scope of academic training programmes leading to relevant qualifications. Most apprenticeship training, however, takes place at lower qualification

levels. Beyond the company-based training contract integrated into the educational system, there is also a shorter so-called professionalisation contract, which forms part of the continuing training system. Wages paid during training are aligned to the minimum wage and rise gradually, based on the age of the trainees. France also has a training levy, which is paid directly to a training institution by the companies. In addition to this, company-based training contracts are subsidised by the regional authorities (Centre d’analyse stratégique 2013; European Commission and IKEI 2012; Steedman 2010).

### *Australia*

Apprenticeships and traineeships are a common feature of VET that exemplifies a dual training model. Originally established for the traditional trades, these programmes have now expanded to include sales, service and clerical occupations. The dual training model operates under a tripartite agreement between the apprentices and trainees, the training providers and employers and, in some cases, the group training organisations who employ the apprentices or trainees and place them with suitable employers. Apprentices and trainees receive an incremental training wage as they progress through their training programme which can be completed on a part-time (where available) or full-time basis. Whilst the majority of apprenticeships and traineeships are offered by registered training providers, some secondary schools also offer these programmes. These programmes are also offered to people aged 45 years or over. Financial incentives are offered to employers who take on new apprentices or trainees or retrain existing workers. Responsibilities for connecting and integrating learning in the main sites (training organisation and the workplace) to achieve quality outcomes are shared between the training organisation and the workplace. The award of the qualification rests with the registered training organisation.

### *Canada*

A training relationship based on a contract between a company and a worker is also viewed as an “apprenticeship” in Canada. Each of the Canadian provinces governs this form of training itself. Nevertheless, a national system for the recognition of training programmes is in place (red seal). It is usually the case that three quarters of learning is conducted in the workplace, whilst one quarter is in the form of back-up teaching. Dual training follows completion of compulsory schooling (12 years). Training providers are usually the so-called community colleges or similar institutions in the post-secondary educational sector. Training within the scope of apprenticeships primarily occurs in manufacturing and craft trade occupations. Companies receive tax breaks if they offer training contracts. Individuals may obtain support

from the Federal Government if they have reached a certain phase of their dual training as a form of incentive for the completion of such training. Companies also receive financial support for training in some cases.

## **“Varieties of Duality” as an Object for Comparative Research on Vocational Education**

Company-based and dual vocational education and training is attracting considerable attention internationally. It is viewed as a key means of countering youth unemployment. For this reason, many countries are involved in drawing up and implementing reform plans to put vocational education and training on a stronger company-based footing. The OECD is also addressing the topic of company-based training in VET in a current project.

All in all, this debate and political action mainly focus on the potential effect for labour market integration. Almost no emphasis is directed at questions that arise on the *integration of learning experiences from school or college on one side and work on the other*. Neither questions about how to design curricula is substantially addressed in that regard.

“Work-based learning” and “apprenticeships” are key terms in the international discourses, especially when it comes to discussions on the transfer of VET models. Whereas the term “work-based learning” is too non-specific because it may be associated with a very wide range of constellations that are unconnected with vocational education and training, the terms “apprenticeship” and “dual system” are too specific and concrete. Typical forms of integration of companies into VET are company-based vocational education and training (“apprenticeship”), cooperative education and alternating training (alternance). Data on company-based and school-based forms of dual VET has been presented in order to highlight that dualised forms of vocational education and training exist in countries, which are not usually classified as having dual VET systems. Moreover, these forms frequently exist parallel to one another. “Alternating learning situations in accordance with the dual principle” as suggested by some authors encompass a continuum from largely unregulated traineeship arrangements to forms of regulated company-based VET within an established dual vocational education and training system. In that sense, duality is a characteristic of many or even any form of vocational education provision. However, the distinct forms of “duality” also have multifarious implications for curricular integration of work-based and school-based learning experiences and learning outcomes, accordingly.

Germany’s system of dual vocational education and training together with Switzerland and Austria, in which company-based contractually regulated training arrangements are integrated into the formal secondary VET system, means that,



viewed from an international perspective, those countries occupy a separate position. A certain form of delivering vocational education and including work experience – which might be found in other countries as well – is a common systemic practice in those countries. In that regard there is quite a broad common basis for a joint understanding of the *purposes and goals* of vocational education and the *design of respective educational support to individual learning processes*. Roles of different actors, such as companies and colleges and teachers and trainers, are legally defined and delineated. In addition the role of the individual within this learning setting is also clearly defined as “apprentice”. Denmark, which is usually also categorised amongst dual vocational education and training systems, has a lower (quantitative) level of company participation in training and represents a special case amongst the dual VET systems. Vocational colleges themselves have a very strong significance not only to the organisation of school-based instruction but also on questions of vocational guidance, curriculum design and the selection of appropriate companies for work-based learning. Such functions are regulated on other levels and partly through third institutions in some other systems. Different institutional setups, roles of actors and availability and division of learning time render the pedagogical task into something different that might need or will empirically lead to *other concepts of curricular integration*. It might be more similar to another form of duality, i.e. alternating training.

Whereas internationally comparative educational research offers access to a good data and information base in some areas, we still have too little knowledge of the conditions governing the realisation of work-based learning through vehicles ranging from single traineeships to comprehensive company-based training arrangements fully integrated into VET systems. We are still far away from a mapping or topology of vocational programmes, forms of provision and their relation to curricular and didactical concepts. However, this would be an important prerequisite for scientific analysis that allows for the kinds of evidence that are increasingly demanded by policymakers and could form the basis of an evidence-based curriculum design.

The challenge for comparative research in vocational education will be to look at “varieties of duality” that are embedded into national systems. This variety goes across systems but can also be found within national contexts. This implies on the one hand that the focus of research has to be directed more closely to the actual form of implementing duality on a level that is well below the systemic level whilst on the other hand guaranteeing a constant back reference to the national contexts of skill formation. Another challenge is that in some cases, it might be more appropriate to look at vocational learning as something embedded into and geared more towards certain types of employment practices than to educational practices.

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