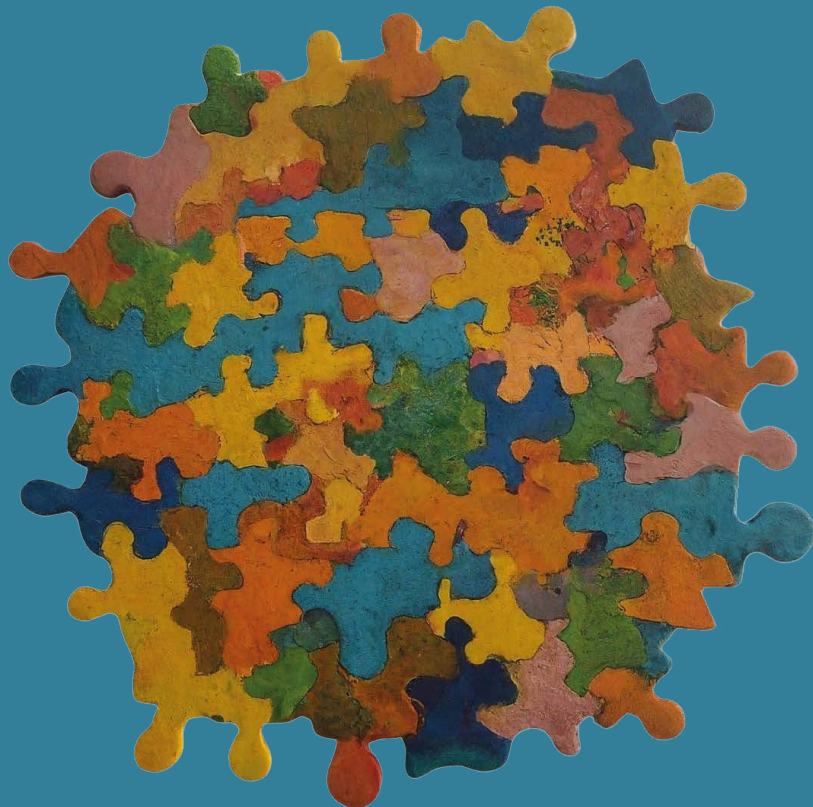


Paolo Bertuletti, Johannes K. Schmees, Fabienne-Agnes Baumann,
Dietmar Frommberger & Francesco Magni (Eds.)



Vocational Education in European Regions

Lower Saxony and Lombardy in Comparison

DAAD

Deutscher Akademischer Austauschdienst
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Contents

Preface	5
Theoretical perspective	9
<i>Fabienne-Agnes Baumann</i> Researching vocational education and training from a regional perspective: The skill ecosystem approach	11
The case of Lower Saxony	25
<i>Dietmar Frommberger</i> Diversity at a glance: Vocational education and training in Germany, between standardisation and fragmentation	27
<i>Tim Migura</i> Structures and challenges of the dual apprenticeship system in Lower Saxony ...	45
<i>Silke Lange</i> Diversity of vocational schools in Lower Saxony	67
<i>Silke Lange, Kristina Trampe, Christoph Porcher, Dietmar Frommberger</i> Vocational teacher training in Germany and Lower Saxony – conditions, models and research needs	95
The case of Lombardy	117
<i>Francesco Magni, Virginia Capriotti</i> Vocational education and training systems in Italy and Lombardy: Between light and shadow	119
<i>Evelina Scaglia</i> Historical Perspectives on the vocational education and training systems at the national and local level	135
<i>Giada Ragone</i> Lombardy as a laboratory for innovations in vocational education and training: A constitutional perspective	149

Paolo Bertuletti, Andrea Potestio

How Lombardy's short cycle tertiary education promotes innovation 159

Comparative perspective 181

Paolo Bertuletti, Johannes Karl Schmees

Vocational education and training in Lombardy and Lower Saxony:

An exemplary case for international comparative research into regions 183

Vocational education and training in Lombardy and Lower Saxony: An exemplary case for international comparative research into regions

PAOLO BERTULETTI, JOHANNES KARL SCHMEES

Abstract: In international vocational education and training (VET) research, countries are often the default unit of analysis, but this can overlook regional differences. The contributions in this volume suggest that comparative research cannot do without considering the regional dimension, using Lower Saxony and Lombardy as examples of how institutional settings, history, and local needs impact VET systems, which necessarily also changes the scope of analysis. In these two specific cases, this is particularly true with regard to the dual approach in VET, the organisation of school-based vocational pathways, the provision of higher VET and teachers's training.

Keywords: Comparative Research; Regions; Vocational Education and Training.

1 Reasons of a methodological choice

In international comparative vocational education and training (VET) research, the basic unit of a country is usually taken for granted. There are good reasons for this. First and foremost, legislation in general, and educational legislation in particular, are bound closely to national territory. In this line of thought, the International Handbook of Vocational Education and Training, in short IHBB, probably the most ambitious attempt to systematically build in-depth knowledge of VET systems, focuses primarily on studies of countries.

However, this logic begins to fall apart when it comes to federal systems. Federal states usually have at least some legislative power over education in general, as well as vocational education in particular. Taking Germany as an example, it is misleading to talk about the 'education system of Germany'. Rather, the 16 federated different states should be analysed individually and then, if possible, re-categorised into states with similar patterns. While there is more uniformity when it comes to the dual apprenticeship system, as workplace training is regulated at the federal state, school-based training, which is part of dual apprenticeship training as well as school-based VET in Germany, is by and large regulated at the federated state level. When it comes to Switzerland, another federal state, the dual apprenticeship system is dominant only in the German-speaking cantons (Bonoli & Vorpe, 2022) and by no means prevails in the other three language regions. Substantial differences between federated states can also

be observed in Canada (Annen, forthcoming), Australia (Deißinger et al., 2017), and the United States of America (Zirkle & Martin, 2012).

But also, when it comes to unitary countries, the VET system does not necessarily expand across such territories in a uniform fashion. In Italy, there are two parallel systems, one governed by the central state and the other by the regions, which has resulted in great territorial differentiation. Such differences are even more stark when considering the autonomous region of South Tyrol, which, prior to the First World War, was part of the Austro-Hungarian Empire. Here, a dual apprenticeship system similar to the contemporary one in Austria is in place. The same situation holds for Hong Kong, where the VET system is closer in nature to that of the United Kingdom rather than the one found in mainland China (Pan et al., 2020).

Finally, we can even observe differences in systems that are governed by the very same legislation. Recent cross-border studies have unearthed some evidence suggesting a convergence of border regions due to their peripheral geography (push factor) as well as their proximity to regions in other states (pull factor) (Graf & Lohse, 2021), which results in a kind of cross-border skill ecosystem. Nevertheless, even without such proximity to other states, regions can develop their own unique VET profiles (Gjelstad, 2023), as in the case of the area around Bergen, a global centre for oil exploitation. Here, adaptation to regional industry has led to unique profiling and development.

In short, a comparison of dual VET models which does not assume a regional perspective cannot be insightful¹. This is first because VET is driven by actors who operate regionally and locally and rely on the tangible and intangible infrastructures embedded in a specific area, as the theory of the 'skill ecosystem' illustrated by Fabienne-Agnes Baumann in this volume demonstrates. Additionally, the configuration of each skill system depends on distinctive institutional frameworks rooted in cultural, social, and economic contexts, which are often historically and locally anchored (Busemeyer & Trampusch, 2012). Furthermore, the role assigned to regional governance significantly influences the functioning of VET systems, as institutional and legislative decisions made at this level create substantial differences between systems. The comparison between two administrative regions similar in territorial extent and population, such as Lower Saxony, one of the 16 German *Länder*, and Lombardy, one of the 20 Italian *Regioni*, offers a good illustration of that.

Therefore, there is a strong case for attending to regional cases in particular when analysing VET systems, and, in line with Philips (2006), there is also a reason to be sceptical if the unit of comparison in international VET research is the state. Consequently, we support the use of regional cases in international comparative VET research, as such an approach allows for more accurate research designs to be established. Using John Stuart Mill's comparative approach as an example, either in terms of the most similar or dissimilar instances, it becomes obvious why regional cases pro-

1 Of course, the concept of a 'region' is itself rather vague and encompasses geographical, cultural, economic, political, and social dimensions. We understand the notion here as a territorial unit that is smaller in extent and administratively integrated within a nation-state.

vide a suitable unit for comparison for many research questions. The goal of both research designs is to establish causal connections by choosing cases that provide a certain degree of similarity or dissimilarity, respectively. If, however, a country is taken as the unit of comparison instead, it might be difficult to select those ‘variables’ that allow for a coherent evaluation. This accounts in particular for those systems where the legislation differs from region to region.

When it comes to the VET systems of Lombardy and Lower Saxony, we compare two regional systems that have a certain degree of independence with respect to their VET systems. Lombardy is regarded as a special case when it comes to Italy, while Lower Saxony is less special in this sense; however, due to the federal structure of Germany, it has legislative power when it comes to school-based VET. This justifies the use of Lombardy, as well as Lower Saxony, as cases to be considered on their own terms. Nevertheless, they remain situated in very different VET systems. Using Mill’s most dissimilar case design, we argue that despite their differences, these systems share a lot of similar developments that must have a source beyond the national case. Here, we could argue that internationalisation (as a placeholder for reasons beyond the nation that would need to be further assessed case by case) in TVET policies play a substantial part.

2 Areas for interregional comparison

In this section, we use the rich data and descriptions from this book to elaborate on three topics that we find particularly interesting when it comes to analysing similar policy directions. The first is dual approaches in VET. While such a phenomenon is less surprising in Lower Saxony, what we might call ‘symmetric’ developments when it comes to dual approaches remain intriguing. The same accounts for school-based VET, as the unexpected diversification of school-based VET programmes in Lower Saxony is found to align with the traditional bipartite structure of VET in Lombardy. Furthermore, developments in higher VET can be observed in both study regions, mostly in the form of a combination of higher education and industry placements. Finally, when it comes to VET teacher training, the observed convergences are less likely to occur on a structural level, but more on the level of professionalisation, which is increasingly in demand.

2.1 Dual approaches

In the last two decades, the strong economic performance and low youth unemployment rates seen in nations that employ dual VET programmes have prompted several countries to introduce or implement vocational pathways based on the systematic alternation between on-the-job training and school education (OECD, 2017). Such is the case of Italy, a country that traditionally privileged school-based VET but recently tried to import the well-known and world-wide appreciated dual system found in Germany (Bertuletti, 2021). Despite the fact that a direct transfer of this model to a different cul-

tural, institutional, and socio-economic context is not possible (Euler, 2013), similar attempts to assimilate a supposed 'national' paradigm attributed to a foreign country can be misleading and oversimplifying for another reason. As Dietmar Frommberger explains in his contribution to this volume, in Germany the provision of dual programmes goes far beyond the dual apprenticeship model and is very diversified indeed, as it must respond to various company-specific qualification requirements and local educational demands. In Lower Saxony, for instance, a peculiar variety of vocational pathways can be viewed as an important asset of the regional education system, as well as a strategy for coping with the emergent challenges that are now threatening VET in this region, such as the loss of attractiveness, high drop-out rates, matching problems, and gender bias in the choice of certain vocational careers (see Tim Migura in this volume).

The relevance of the 'regional scale' is even more evident in Italy, where VET governance and legislation rely on the exclusive competence of regional administrations, albeit within a national regulatory framework. The case of Lombardy shows how interventions at regional level can make a difference. As Virginia Capriotti and Francesco Magni show elsewhere in this collection, Lombardy is the Italian region in which company-based VET has flourished the most, as the system has been able to meet the demands of a strong, manufactory-oriented territory. This success is the result of a long history rooted in local initiatives carried out by VET schools and businesses since the 19th century, despite the partially successful attempt of the central state to take responsibility for technical and professional education after Italy's unification (see Evelina Scaglia in this volume). However, as Giada Ragone has pointed out, with the constitutional reform of 2001, which handed legislative authority over VET off to the regions, Lombardy has become a vibrant 'laboratory' of legislative and educational innovation, developing its own regional VET system characterised by unique features and the highest enrolment rate in Italy².

In both Lower Saxony and Lombardy, similar developments can be observed, though in opposite directions. In Lower Saxony, a multitude of VET programmes at specialised schools (e.g., those in health care or early education) were established to meet society's skill needs. Meanwhile, in Lombardy, it was precisely the demand for training programmes tailored to the local labour market that drove the development of dual apprenticeships and other forms of dual VET, in contrast to the traditionally more theoretical offerings of state VET schools.

The comparisons between the dual VET approaches in Lower Saxony and Lombardy reveal not only the importance of the regional dimension in the regulation, governance, and concrete implementation of VET, but also the permanent dialectic between central and local management regarding this segment of the education system. The centralised German dual apprenticeship system makes VET in Lower Saxony highly efficient but perhaps more rigid. However, in this region, the federated state government intervenes with its own legislation and provisions to create VET courses outside

2 While this rate would be calculated as such in absolute terms, it would actually be second after the autonomous province of Bolzano (South-Tirol) in relative terms (INAPP, 2023).

the dual apprenticeship system, thereby addressing additional local and individual needs. In Lombardy, the autonomy of a completely regional system, wherein providers can also organise their own training programmes with a certain degree of freedom, is probably more flexible and quicker to adapt to the needs of the local labour market. However, it also suffers from the weakness of a system that cannot rely on the vital support in forecasting, planning and coordinating VET provisions guaranteed by the national government and the tripartite governance typical of the so-called German 'dual apprenticeship system'. This fragility, combined with the chronic underfunding of dual VET, thus continues to result in limited development.

2.2 School-based approaches

The differentiation of VET systems into school-based, company-based, and dual approaches can be considered a classical distinction introduced by Wolf-D. Greinert (2010) based on his historical analysis of European VET systems and their development. In his analysis, the VET system of France served as the prototypical example of a school-based and statist system; the system in England held this role for market-driven systems, and Germany served as the archetype for dual and neo-corporatist approaches. However, to date, the dominance of school-based systems around the world remains striking. Newer analysis of the English system and the dominance of Further Education Colleges delivering VET qualifications even questions whether the prototypical case of Greinert is developing in other directions. Furthermore, when it comes to Germany, the second prototypical case, there is a growing presence of school-based VET. Currently, around half of the students in German VET are in either school-based qualifications or the so-called transition system, both of which can be subsumed under school-based VET. Therefore, the third prototypical case in Greinert's classification remains pending. From the English and the German examples, it becomes obvious that school-based VET is increasing its dominance, despite global dual apprenticeship transfer agendas. It is therefore legitimate and necessary to take a closer look at how school-based approaches are applied in the two study cases.

By and large, both cases exhibit school-based VET programmes with industry placements. While in Lombardy, this form of school-based dual VET, even if not as apprenticeship, is prevalent; in Lower Saxony, it represents around half of all students in VET (in line with the national average). Given the dominance of the German dual apprenticeship in the global discourse on excellence in VET, it is surprising, at least for an international audience, to see the diversity in school-based approaches in a particular federated state like Lower Saxony. As Silke Lange explains in this volume, VET schools in Lower Saxony go far beyond being just the second learning venue in the dual apprenticeship system. They also offer full qualifications in certain trades, provide vocation-related qualifications for secondary and upper secondary education, and are an essential part of the transition system through which general vocational skills are trained, sometimes combined with qualifications for secondary education. In general, school-based VET is growing with respect to student numbers in Lower Saxony and in Germany.

In Lombardy, with a much less developed dual apprenticeship approach, schools play an even more dominant role in VET. It must also be considered that since World War II, two different vocational education channels have developed in Lombardy: the five-year programmes regulated at the national level by the central state (*Istruzione Professionale*, IP) and the three- or four-year programmes regulated at the regional level (*Istruzione e Formazione Professionale*, IeFP). The first ones are ‘school-based’ (with face-to-face lectures and an organisation of teaching still modelled on high schools and other upper secondary school tracks), while the second are ‘work-based’, with more significant teaching and organisational flexibility, workshops, and the systematic integration of work-based learning in the form of internships. The need, due to financial reasons, for a subsidiary offer by the central state for the first type of VET, which overlaps with regional ones, makes the system less transparent and hinders the full development of a dual VET system in alignment with European standards. This happens in Lombardy, but even more so in the rest of Italy (Zagardo, 2022).

While the differentiation between work-based and school-based systems makes sense from an Italian perspective to systematise these two models of VET, in the classification of Geinert, which assumes the governance structure as the most prominent indicator, both models would represent school-based VET; accordingly, such a categorisation does not account for the complexity of the regional system in its actual reality.

2.3 Higher VET

Higher VET is a contemporary topic of interest not just in academic discussions, but also when it comes to global policy discourses. Generally, there are three forms in which higher VET can be developed. One would be to systematise further vocational education and ascribe it to tertiary levels of a qualification framework, making it, at least nominally, an alternative to higher education. The second would be to make existing higher education more vocational, for example, by adding industry placements or combining them with a vocational qualification. The third would be to create new higher education institutions. While there are specific examples of all of these developments, it is worth noting that they are simultaneously observable in different parts of the world.

When looking at the specific cases of Lombardy and Lower Saxony, both regions have undergone different developments in higher VET, which are attributable to the first and third forms, respectively. In Lower Saxony, as in the rest of Germany, higher VET was systematised by the last reform of the Vocational Education Act in 2020. Here, three levels of higher VET were systematised as Vocational Specialist, Bachelor Professional, and Master Professional (Frommberger & Schmees, 2020), listed at Levels 4, 5 and 6 of the EQF, respectively. Parallel to these developments, the dual-study scheme (see Tim Migura in this volume) is an established programme that combines VET with applied higher education studies. While Lower Saxony does not have its own dual study or cooperative university, these courses are offered at the universities of applied sciences.

In Lombardy, as in the rest of Italy, efforts have been concentrated on relaunching a new short-cycle tertiary education model (*Istruzione tecnologica superiore*, ITS), estab-

lished only in 2008, through the funding received from the Recovery and Resilience Plan approved in 2021. ITS academies, similar to German *Fachschule/Fachakademie*, do not originate from initiatives spearheaded by the central or regional government, but through a bottom-up process involving local aggregations of stakeholders, such as companies, VET schools, upper secondary schools, universities, research centres, and local authorities. Where greater autonomy is given to stakeholders, the local dimension becomes more prominent. In this sense, Lombardy's short-cycle tertiary education represents a paradigmatic example of how the convergence of local initiatives, territorial professional needs, and national legislation can create the right conditions for establishing innovation-oriented vocational courses – which is exactly what is expected from VET (see Paolo Bertuletti and Andrea Potestio's contribution in this volume).

2.4 VET teacher training

Teacher education, a key issue with regards to VET quality, is normally managed at the regional level. Currently, both Lower Saxony and Lombardy are struggling to attract the right candidates to the VET teaching profession. A common challenge here is the maintenance of high standards for teacher professionalisation while increasing accessibility to this career path for a larger number of people.

In Germany, the initial training of VET teachers is regulated by national legislation and agreements established by the Standing Conference of the Ministers of Education and Cultural Affairs (KMK 2018), which are then supplemented by state-specific requirements. In Lower Saxony, as in all German federated states and for all school levels, training occurs in two phases: a master's degree must first be obtained, followed by a preparatory service based on teaching practice (the so-called *Referendariat* or *Vorbereitungsdienst*).

It should be noted that the initial academic course must include the study of the educational sciences, with a focus on vocational education, as well as didactics pertaining to the vocational subject area. Additionally, teachers of technical subjects are required to have practical work experience (of at least twelve months) related to their vocational specialisation. Consequently, individuals pursuing a career in VET teaching are significantly more likely to have completed VET vocational training or possess other professional experience. As reported by Lange et al. in this volume, prospective VET teachers in this condition are proportionally more abundant in Lower Saxony than in other German federated states.

To cope with VET teacher shortages, a problem that all regions in Germany are now suffering from, Lower Saxony has established a wide range of different study models and access routes into this profession (see Lange et al. in this volume). These models and routes may be associated with different entry requirements, curricula, and forms of cooperation with other institutions in pre-service teacher training (e. g., other universities, VET schools, or teacher's training colleges). Such heterogenisation represents an attempt to attract new target groups to VET teacher training and careers. As a general tendency, all measures in the context of this growing differentiation go hand in hand

with a reduction of previous formal standards for teacher training. This could potentially undermine the level of the teachers' pedagogical and scientific preparation.

In Lombardy, professional conditions for qualifying as a teacher in the VET system are much looser than those in Lower Saxony. Specifically, VET teachers must possess one of the following alternative requirements: either a national teaching qualification in a specific subject (obtained at the national level through a special training programme for teachers during or after the course of a master's degree in one's own teaching subject) or a bachelor's degree with 'sufficient' teaching experience in the national educational system (e. g., as substitute teachers). Such experience is set to a minimum of five years, when the candidate teacher has got only an upper secondary education leaving certificate. Those who want to teach practical subjects must have a minimum of five years of professional experience directly related to their field of instruction. It is also possible for VET providers to hire professionals active in a job sector congruent with their teaching subjects (e. g., an engineer for a mechanic course or an employee of a big retail company for a marketing course), but early career teachers coming from a previous experience in one company, as well as professionals hired under part-time contracts, are quite rare, given that teachers' wages are lower than those in other sectors.

One critical point worth emphasising is the continuous training of VET teachers. According to Lombardy's legislation, participation in professional development courses is not compulsory for VET teachers. However, national collective agreements stipulate a minimum of 100 training hours annually for teacher development. Nevertheless, it is important to note that public funding for these initiatives is not guaranteed, and teaching personnel often rely on self-financing by their employers.

In summary, in Lower Saxony, VET teachers' initial education ensures a high level of pedagogical preparation, as well as solid theoretical and technical knowledge. However, the region is now facing recruitment challenges due to a shortage of candidates. Lombardy has not encountered this issue, possibly because VET is less widespread there, resulting in a lower demand for VET teachers. At the same time, another concern in this region is the quality of teaching, which may be compromised due to lower professional requirements. Lower Saxony is attempting to address the teacher shortage by creating new ways to enter this occupation. In the future, lateral entry opportunities that bypass traditional training paths, such as hiring professionals active in fields congruent with teaching subjects, could be considered. To counterbalance the potential shortcomings in pedagogical preparation among such personnel, investing in continuous teacher training could be a solution. Such an approach may also be beneficial for the entire VET system in Lombardy.

3 Summary and conclusion

In international comparative research on VET, it is often assumed that countries are the appropriate unit of analysis. However, this perspective is problematic in federal systems, where education laws may differ significantly between federated states. Even in unitary countries, such as Italy and China, there are regional differences in VET. Consider, for example, the dual apprenticeship system in South Tyrol, with its historical connections to Austria, or the VET system of Hong Kong, with its long-term associations with the United Kingdom. Differences in VET systems can also arise within the same national legislation, such as the unique regional profiles shaped by local industries found in the area around Bergen, Norway. Such patterns and disparities highlight the importance of considering regional perspectives. Therefore, we argue that the use of regional cases in VET research can provide more accurate and insightful comparisons than a nation-based approach.

As far as Lombardy and Lower Saxony are concerned, we have examined their dual approaches to VET and found that while certain patterns were expected in Lower Saxony, the parallel developments in Lombardy were surprising. Similarly, the diversification of school-based VET programmes in Lower Saxony is unexpectedly in line with the traditional bipartite VET structure in Lombardy. Both regions have also exhibited developments in higher VET, which often entails a combination of higher education and industrial placements. Finally, we observed a convergence in VET teacher training – not so much in structure, but in the growing demand for professionalisation.

In conclusion, while dual apprenticeships are on the rise in Lombardy, school-based VET programmes are increasing in Lower Saxony. Although these two regions make different choices with regard to higher VET and teacher training, they face similar issues and challenges. In general, the VET systems of the two regions show some dialectical tension in the regulation and governance of VET. On the one hand, there is a need for standardisation at the national level to ensure stable and high-quality provision. On the other hand, further differentiation is required in response to local needs. Historical reasons and the institutional culture of each nation influence the resolution of this dialectic, but this does not diminish – on the contrary, it highlights – the importance of regional characteristics in determining the concrete form that VET takes in different areas.

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