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Swiss VET between National Framework and Cantonal Autonomy: A Historical Perspective

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Abstract: Despite the fact that the Swiss VET system has been regulated by federal laws since 1930, the 26 cantons that make up the Swiss Confederation enjoy a certain room for maneuver when implementing federal provisions at the regional level. This is reflected in sometimes significant differences between the cantons, particularly with regard to participation in dual VET. Based on a historical reconstruction of the institutionalization process of the Swiss VET system, our contribution first explains the institutional conditions under which cantonal differences are possible; secondly describes their evolution; and finally identifies the main factors which influence their appearance. In more detail, our contribution begins with a reconstruction of the development of VET in Switzerland and in three cantons (ZH, GE, TI) during the decisive period for the Swiss VET system from 1950 to 1970. This reconstruction is based firstly on a historical analysis of sources (laws, messages, statistical data, reports, brochures, press articles, etc.) published from 1880 to the present day, with particular attention to the period 1950–1970. This analysis allows us to reconstruct the process of institutionalization of the field, with emphasis on the constant tension between federal regulation and cantonal autonomy, as well as the statistical evolution of cantonal differences. In a second step, we subject the same set of sources to a discourse analysis allowing us to identify the main arguments accompanying the decision-making process in our three cantons. This latter analysis enables us to show the sometimes-subtle differences between cantonal policies and their respective conceptions of VET.

Keywords: Swiss VET system; dual apprenticeship; cantonal differences; regional VET policies

Citation: Bonoli, L.; Vorpe, J. Swiss VET between National Framework and Cantonal Autonomy: A Historical Perspective. *Educ. Sci.* **2022**, *12*, 114. <https://doi.org/10.3390/educsci12020114>

Academic Editors: Regula Julia Leemann, Kriesi Irene and Rita Nikolai

Received: 28 September 2021

Accepted: 1 February 2022

Published: 8 February 2022

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1. Introduction

The Swiss education system is not as homogeneous and uniform as official diagrams suggest (cf. EDK, Conference of Cantonal Ministers of Education, [1] or SERI, Secretariat for Education, Research, and Innovation, [2]). It profoundly reflects the federal organization of the Swiss state. The modern institutional bases of this federal organization are set in the Constitution of 1848, in which control over many areas, including education, was assigned to the cantons. This origin is still reflected today in the sometimes-significant differences between the 26 cantonal education systems.

From 1848 to the present day, significant steps have been taken to reduce cantonal differences, to unify structures, and to standardize programs. Official diagrams, such as those of the EDK [1] or the SERI [2], highlight the results of this work of uniformization and standardization. This is ultimately their role. However, in performing this role, they inevitably conceal the differences that still exist. Indeed, the cantons remain autonomous in many aspects concerning the concrete organization of their education system—an autonomy which allows them to pursue *specific cantonal education policies*, within the room for maneuver allowed by federal provisions or intercantonal agreements.

The aim of our contribution is to explore this cantonal room for maneuver. The focus is on USE (upper secondary education), with particular attention to cantonal VET

(vocational education and training) policies, which are analyzed from a historical perspective. This shall allow us to analyze the historical evolution of some of the most striking cantonal differences, to define the institutional conditions of their emergence, and to identify the main factors that may influence them.

The main lesson of our research is that these differences evolve and are accentuated in relation to specific cantonal VET policies adopted in the 1950s–1970s in response to the economic, social, and educational challenges that emerged in that period of economic boom and educational expansion.

By realizing a comparative analysis based on the restricted framework of three Swiss cantons, our research allows us to enter into the details of the functioning of the cantonal VET systems. Our analysis then highlights how cantonal differences take shape mainly around five dimensions, which outline the area of autonomy of the cantons in relation to the federal provisions: role of the cantonal state, role of private actors, role of the vocational schools, range of equal opportunity measures, and aims of VET.

This analysis fills, primarily, a gap in the research on VET in Switzerland. While research focusing on cantonal differences is gradually developing in Switzerland (see, for example, the research project led by Regula Leemann “Governance of transitions in the Swiss educational system” [3] and the one led by Markus Maurer “Recognition of prior learning in Switzerland’s collectively organised skill formation system” [4]), very little work is yet being carried out to study such differences from a historical perspective. Among recent research addressing cantonal differences in VET from a historical perspective, we can mention the publications of the research team composed by Christian Imdorf, Esther Berner, and Philipp Gonon [5,6], which proposes a comparative analysis of the development of VET in the cantons of Geneva and Lucerne from a Sociology of Conventions perspective, and a publication of Esther Berner and Lorenzo Bonoli [7], which offers a historical comparison between Geneva and Zürich. This last publication constitutes an initial exploration of the issues at the heart of this contribution. It provides the theoretical and documentary basis for the development of the research project, the results of which are presented here. Secondly, our analysis also offers a contribution to the current international research which focuses on the central characteristics of the functioning of VET systems. Beyond the cantonal cases, the highlighted five dimensions offer a theoretical framework to analyze and understand the functioning and the evolution of VET systems in general, confirming or complementing theoretical frameworks developed at the level of the international debate in recent years (cf. in particular [8–11]).

Following a general introduction concerning cantonal differences in USE, the contribution focuses on the development of dual apprenticeship, the most important USE pathway in Switzerland. The evolution of this pathway allows us to identify a pivotal period in cantonal differences and in the general evolution of the field, the period 1950–1970, which we study in depth through the analysis of the situation in three cantons: ZH (Zürich), GE (Geneva), and TI (Ticino). Then, thanks to an approach combining historical reconstruction and discourse analysis, it shall be possible, firstly, to describe the historical context of the years 1950–1970, and secondly, to show the gradual implementation of specific cantonal policies in the three cantons. This analysis shall lead us to the five dimensions mentioned above and provide us with central elements for understanding the origins of cantonal differences as we observe them today.

2. Cantonal Differences despite a Movement toward Homogenization

If we look at the Swiss educational landscape and its evolution over the last 150 years, we can talk about a slow but progressive movement toward uniformity and centralization. Lucien Criblez speaks of a homogenization movement that progressively modifies the characteristics of “the traditional educational federalism”: “Structures and contents of educational institutions are [...] gradually mutually aligned, homogenized” [...], “in a gradual but neither continuous and nor straightforward process” [12] (p. 13). Considering VET in particular, Philipp Gonon also identifies a similar movement from a fragmentation of

provisions at cantonal and sectoral level to their progressive integration into a unitary legal framework under the control of the Confederation [13] (p. 33). This movement took shape first at the cantonal level, then at the intercantonal and national level and was realized through different tools, whether federal laws, intercantonal agreements, or the creation of intercantonal coordination bodies (cf. the volume *Bildungsraum Schweiz* [14], which describes in detail the main stages of this homogenization process).

However, notwithstanding this homogenization movement, the Swiss education system still contains many aspects where cantonal specificities emerge. This is particularly true if we look at young people's attendance at USE programs, where there are significant differences, despite the existence of federal regulations, both for VET programs and for the general education diploma (i.e., Federal Baccalaureate).

The following graph (Figure 1) shows the significant differences between the cantons in the attendance of Swiss young people at the three main USE programs: dual apprenticeship, full-time vocational schools, and general education schools. The category of 'General Education' includes Baccalaureate schools (DE, FR, IT: *Gymnasium, Lycée/Collège/Gymnase, Liceo*) and upper secondary specialized schools (*Fachmittelschulen, Écoles de culture générale, Scuole specializzate*). (In order to ensure comparability between these data and the historical data in Figure 2, the percentages have been calculated by taking the total number of apprentices, full-time VET school students, and general education students and relating them to the age group 15–18 in 2019. The same calculation is used in Figure 2, which shows the percentages of apprentices in relation to the different age groups from 1900 to 2019.)

The table shows that while a sort of unitary model emerges for about fifteen Swiss cantons on the left-hand side, on the right-hand side, this model disappears. The first cantons on the left have a very high rate of apprentices, a very low rate of full-time vocational school students, and a moderate rate of general education school students. In contrast, the further to the right one moves, the lower the rate of apprentices, the higher the rate of full-time vocational school students, and above all, the higher the rate of students in general education schools, culminating in the extreme case of Geneva, which has a dual apprentice's rate of 21.5%, far below the Swiss average of 59.6%, and a rate of students in general education of 58.2%, far above the Swiss average of 27.7%.

These differences can be particularly striking and lead us to the central questions of our article: How can these differences emerge in one and the same national education system? Additionally, from a historical perspective: When can they first be observed? How do they evolve? Finally, what factors influenced them?

The figure raises another highly complex issue. It is striking to note how the seven Latin cantons of the Swiss Confederation are all on the right-hand side of the graph, with Neuchâtel, Ticino, Vaud, and Geneva at the extreme end. This situation raises the question of the influence of the linguistic-cultural affiliation of the cantons on the development of their education systems. This issue constitutes a background question in our research, which we try to address indirectly while avoiding reference to a general and difficult-to-grasp notion of 'culture'. As we shall see, we instead focus on more specific differentiating factors that emerge at the pedagogical, sociological, political, and economic levels, which help to describe these differences, commonly referred to in the public debate as 'cultural differences'.

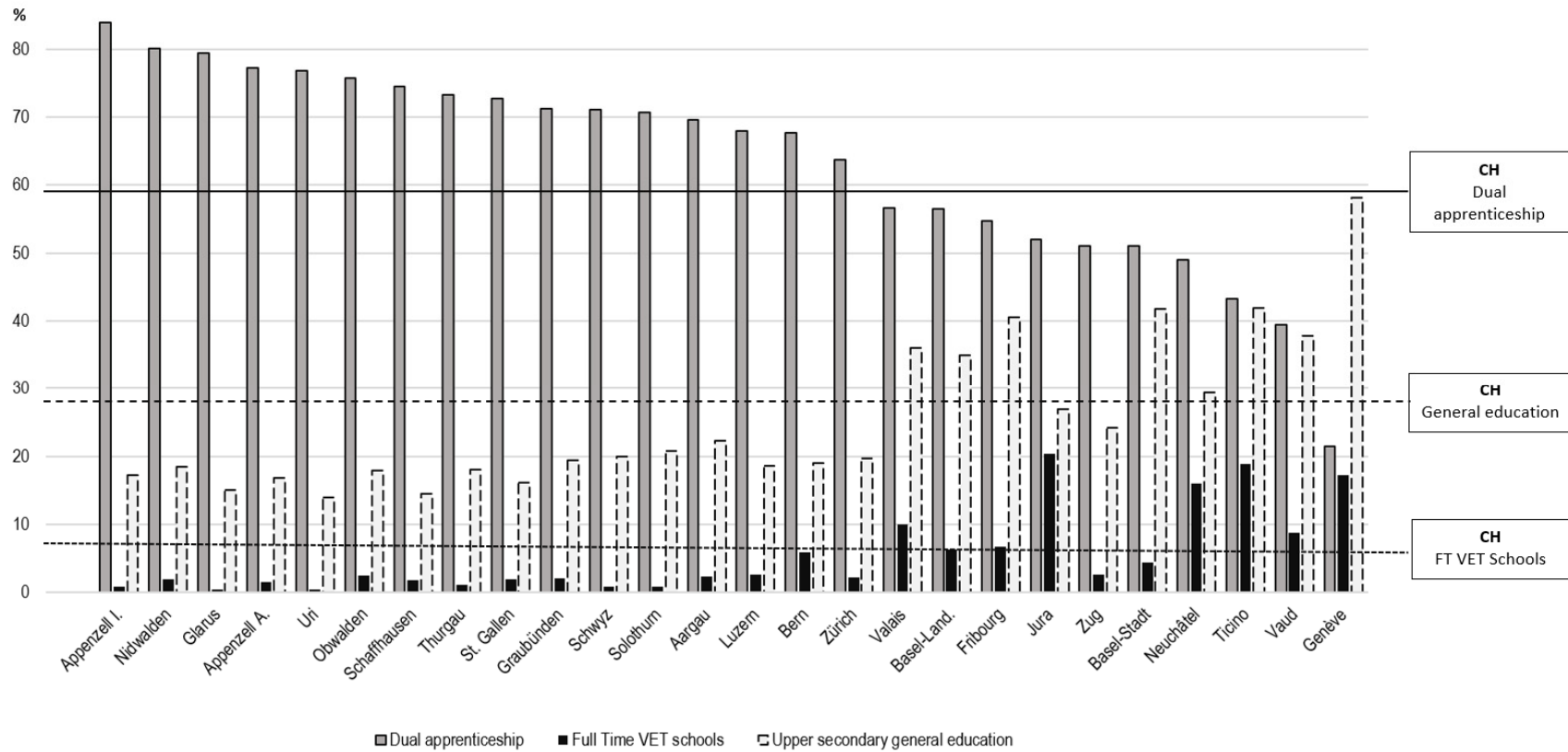


Figure 1. Relationship between the number of apprentices, full-time VET school students, general education students and the age group 15–18 in 2019 (Data: Swiss Federal Statistic Office—SFSO, 2021).

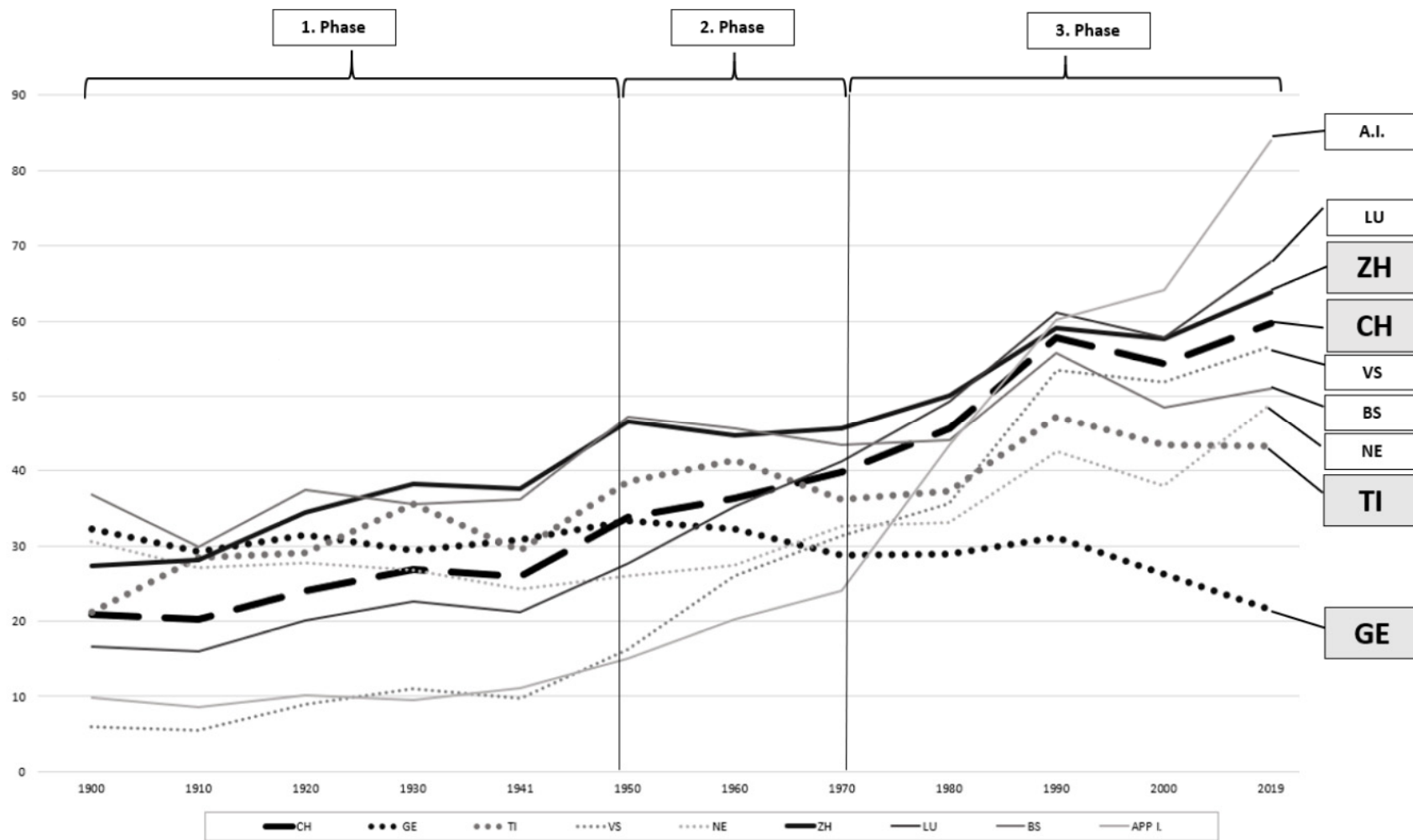


Figure 2. The evolution of the relationship between the number of apprentices in CH and in 8 cantons and the corresponding age group 15–18 from 1900 to 2019 (Data: Federal Census; FSO 2021).

3. The Evolution of Cantonal Differences from 1900 to the Present Day

An in-depth analysis of the historical data concerning Swiss apprentices allows us to better understand the issues at stake in our research and to situate our analysis within a precise historical period. Data from the Population Census from 1900 to 2000 and from the FSO (Federal Statistical Office) from 2000 to 2019 allow us to reconstruct the evolution of the rate of apprentices in Switzerland and in the cantons over the last 120 years.

Figure 2 shows the evolution of the rate of apprentices in Switzerland and in eight cantons from 1900 to 2019. The choice to concentrate on the rate of apprentices is necessitated by the limited existing historical data, cf. [15]. Unfortunately, historical data on attendance at full-time vocational schools or general education schools are incomplete and not comparable until a few decades ago. The only relatively consistent data over a long period of time are those for apprentices. That said, given the proportional importance of the apprenticeship pathway in Swiss USE, these data provide an interesting indicator for the evolution of the sector as a whole. A first glance quickly reveals a general trend toward an increase in the apprentices' rate: all the cantons except Geneva follow a more or less marked upward trend which is reflected in the Swiss average (broken line), which itself rises from 21% in 1900 to 59% in 2019. However, this first glance also shows that there has been no homogenization in the participation in dual apprenticeship. While the difference between the highest and lowest rates in 1900 (Basel and Valais) was 30 points, it increased to 63 points in 2019 (Appenzell Rhodes Interior and Geneva). Only around the 1970s/1980s can we see a certain reduction in the differences, but from the 1980s onwards, these increase again.

By examining this graph more closely, we can identify three phases in the evolution of rates of apprentices. From 1900 to 1950 (first phase), we can observe a slight increase in the rates of apprentices and stable cantonal differences. In this phase, two factors impose themselves as the most determinant in explaining the development of apprenticeships in the cantons: the degree of industrialization and the urban or rural situation of the canton. The cantons showing in 1900 numbers above the Swiss average were the most industrialized cantons with important urban centers. In contrast, the cantons below were agricultural or mountain cantons. During this phase, there is no significant difference between the Latin (dotted lines) and German-speaking cantons (solid lines). Industrialization and urbanistic factors seem to overshadow factors related to a possible cultural affiliation.

Important changes appear in the second phase between 1950 and 1970. These were the years of economic boom. The rate of apprentices generally increases. However, the ranking of the cantons changes. Cantons that were largely above the Swiss average, such as Neuchâtel, Basel, or Ticino, show stagnating if not (actually) weakening rates like Geneva, and from the 1970s, all the Latin cantons find themselves below the Swiss average. At the same time, some cantons which earlier had the lowest rates, such as Luzern or Appenzell I., are catching up, and the difference between the cantons with the highest and lowest apprentices' rate seems to be decreasing. During this phase, the factors of industrialization and urbanization no longer seem to play the same decisive role in the evolution of the apprenticeship. Other factors, as we shall see, have to be taken into account.

The third phase, from 1970 to 2019, is characterized by a pronounced increase in the number of apprentices, followed by a decrease (crisis in apprenticeship places in the 1990s) and a recovery, mainly due to the inclusion of new occupations (health, social work) in statistics on apprentices. As far as cantonal differences are concerned, after a downward trend, the differences are again expanding, with a clear separation between the Latin cantons below the Swiss average and the German-speaking cantons above, with the exception of the canton of Basel-Stadt.

These elements allow us to clarify our research questions and to situate them in time: What happened in the period 1950–1970? What kind of factors do we have to consider in order to explain the evolution of the cantonal differences from this period onwards?

4. Theoretical and Methodological Approach

To answer these questions, choices are necessary. On the one hand, we choose to limit the analysis to three cantons, and on the other hand, we adopt a specific theoretical–methodological approach adapted to our research.

The choice of the three cantons is explained, first of all, by the desire to have cantons representing the three linguistic areas of Switzerland in order to be able to identify any differences that could be traced back to their cultural affiliation. Secondly, with the selection of Geneva and Zurich, we favored the choice of two cantons which, except for their linguistic affiliation, have similarities regarding their economic development and the importance of their urban center, but which are clearly different in terms of their development of dual apprenticeship. Finally, the three selected cantons present three different situations in the evolution of rates of apprentices over the last 120 years. As Figure 2 shows, while the three cantons were well above the Swiss average in 1900, thereafter, we observe that Zürich remains in a stable fashion above the Swiss average. By contrast, we see a stagnation for Ticino that falls below the Swiss average from the 1970s and a decrease for Geneva, which already finds itself below the Swiss average after the 1950s. (The relative stagnation in the curve for ZH between 1950 and 1970 in Figure 2 is mainly due to a strong demographic increase affecting the values on the graphs. The absolute numbers of apprentices increased also in this period: 1950: 16,603; 1960: 23,314; 1970: 25,125 (Federal Population Census).

The situation in these three cantons has been analyzed from a theoretical framework based on a *multidimensional* and *systemic* approach where, on one hand, the term ‘multidimensional’ refers to a perspective that focuses its attention on the widest possible range of factors describing the functioning of the Swiss VET, such as economic, educational, social, and political factors, which directly reflect the complexity of the field; and on the other hand, the term ‘systemic’ refers to a perspective that underlines the articulation of these factors in a ‘system’ where, to use the structuralist formula, ‘everything fits together’, i.e., where all the elements making it up are interconnected, without it being possible to isolate any one in particular.

This theoretical approach has its foundations in recent works in the history of Swiss education and VET, which, without arriving at the formulation of an explicit theoretical model, have been able to highlight the importance of taking into consideration different factors in order to understand the functioning and evolution of educational systems: factors which cover the politico-institutional level [14,16–20], the politico-economic level [21–23], the pedagogical level [24,25], and the social level [23,25–27]. Our theoretical approach also benefits from recent research in historical institutionalism and governance studies [8,28–31]. Without adopting the same theoretical framework, our approach nevertheless pays attention to aspects that are also central to the analysis of these studies, such as the role of the state, the role of private actors [8], and the balance between economic and social purpose [29–31]. In this perspective, our approach takes advantage of their analysis to better understand these same issues in the context of our research.

Against this theoretical background, we developed a two-level methodological approach. Firstly, we carried out a historical reconstruction of the period in question. This involved extensive research in the physical and digital cantonal and federal archives, where we were able to collect numerous sources: laws, reports, parliamentary debates, official statistics, specialized publications, press articles, etc.

The material thus collected allowed us to carry out a historical reconstruction [32,33], aiming at describing the socioeconomic and political situation of VET in Switzerland and in our three cantons, as well as identifying the most important differences between the cantons in terms of cantonal policies during the period 1950–1970.

Secondly, we subjected these same sources to a discourse analysis [34,35]. Discourse analysis allows us to identify the arguments and positions of the actors in the public debate at the time: arguments and positions that reveal similarities but also differences between the three cantons. More precisely, discourse analysis focuses, first of all, on the discourses produced around a specific theme—in this case, VET—at a given time. It aims to identify regularities at the argumentative level emerging in the public debate (in other words, it describes “what the main actors were saying about VET during this period”). Then, it analyzes the conditions of possibility of such statements (in other words, “how could the actors of the time express themselves in this way?”) by relating them to the sociohistorical conditions of the time when the discourses occurred. This analysis allows us to better understand the concerns of the actors of the time and the tensions present in the public debate. In particular, it allows us to better understand why new legal measures were considered necessary and what their expectations were.

The pertinence of this discourse analysis approach is based on the assumption that decisions determining cantonal VET policies originate in arguments and positions that emerge in the public debate and leave discursive traces in our sources. Beyond our research question, which aims to explain the evolution of cantonal differences, our approach also raises a methodological challenge: that of highlighting the effects of discourses on the concrete development of the VET domain. In order to do this, we have sought to systematically relate discourses (in particular, positions, arguments, and expectations that emerge from the public debate) to the adoption of concrete measures in the field, in particular, laws, regulations, and official stances.

5. VET between Federal Regulation and Cantonal Autonomy

Before going into the details of our analysis, it is important to clarify the institutional conditions that have allowed the emergence of cantonal differences. This shall lead us to highlight the delicate balance between federal regulation and cantonal autonomy. Despite the centralization and standardization movement of VET from 1880 to the present day, the cantons succeed in maintaining a certain degree of autonomy, threatening to block any excessively centralizing reforms. In order to avoid conflicts with the cantons, the Confederation adopted, already from the 1880s, a strategy of prudent involvement characterized, in the words of Martina Späni, by “all due caution and consideration for the cantons’ claim to autonomy in cultural policy”, which guided the “VET policy of the Confederation until well into the 20th century” [17] (p. 195).

This cautious attitude on the part of the Confederation is reflected in the scope of the federal laws adopted in the domain. They are ‘framework-laws’ in that they furnish only general provisions, leaving it to the actors in the field, mainly the cantons and the professional associations, to define the details of their implementation (cf. Gonon [13] for an analysis of the role of framework laws in the evolution of the Swiss VET).

This attentiveness to the cantons enabled the 1930 Act and subsequent laws to be adopted without major opposition from the cantons. However, while, politically, these laws demonstrate the ability of Swiss politics to reach compromises in the field of VET, they leave open a loophole in the standardization of the system itself, as the implementation of the Law remains a matter for the cantons. Thus, as Gonon underlines, “all this, what is called implementation, remained under cantonal sovereignty [...]. The “federalist coding” of VET [17] (p. 212) remained in place despite a steady increase in the federal government’s regulatory power and its constantly expanding assignment of tasks” [18] (p. 258).

In concrete terms, the Confederation progressively takes on a series of management and general coordination tasks, such as the definition of the framework conditions for apprenticeship contracts (duration, hours at the vocational school, working/training hours, insurance, etc.), the promulgation of training regulations for different professions (which are defined by the professional branches), and the recognition and protection of diplomas throughout Switzerland and the provision of federal subsidies, which help cantons to

finance many aspects, such as the functioning of vocational schools, the building of new school infrastructures, the organization of vocational guidance, subsidies for apprentices, etc.

For their part, cantons are able to retain a series of prerogatives that we can summarize as follows: the organization of complementary and full-time vocational schools, the control and supervision of apprenticeship contracts and conditions of apprenticeship, the organization of final apprenticeship examinations and the award of diplomas, the organization of vocational guidance, the additional provision of courses at school, the introduction of support measures for young people with learning or financial difficulties, the promotion of the participation of companies in the training of apprentices, and the organization of access routes to USE programs at lower secondary education (see SERI [36] for the official description of the current distribution of tasks between the cantons and the confederation, the bases of which were already set up in the first VET Law of 1930. The SERI document also specifies the key role played by the Professional Organization, a particularly important role in the organization of the VET system, about which we do not go into detail in this article).

These different prerogatives mark out the room for institutional autonomy within which cantonal differences have been able to develop. This institutional room has been maintained in successive legislations and has always been strongly defended by the cantons. However, the way in which this institutional room left to the cantons is interpreted can vary both in terms of the degree of autonomy sought by the cantons and in terms of the nature of the cantonal measures adopted. Here, a more in-depth analysis becomes necessary.

6. Three Main Challenges of VET between 1950 and 1970

The historical reconstruction and analysis of the discourses that we have carried out enable us to point out how, in this period, new challenges confronted VET and pressured it to adopt reforms quickly. This pressure led to the second federal Law on VET in 1963, which came into force in 1965 and replaced the first federal Law of 1930. However, the need to review some aspects of this Law appeared as early as 1969 [37], and a major revision was ordered in the following years, leading to a new federal Law in 1978 (cf. Wettstein [38] for a reconstruction of the historical situation at the origin of the three federal VET laws).

This pressure for reform revolves around three major challenges (for their contextualization in the wider context of Swiss education as a whole, see [24,39]):

- (1) The first challenge was a very high demand for skilled labor driven by the economic boom, which challenged VET to restructure itself in order to increase its attractiveness. In order to provide Swiss companies with the necessary skilled workforce, VET had to try to attract more young people, dissuading them from entering the labor market directly without any training (a concrete possibility in a period of full employment such as the 1950s–1970s) and responding to the competition coming from general education programs (which took away from VET its ‘best elements’). The importance of this challenge emerges clearly from the numerous publications of the economist Francesco Kneschaurek who, in the 1960s, strongly influenced the Swiss public debate by stressing the importance of investing in education and training at all levels of specialization [40,41];
- (2) At the same time, vocational training had to respond to an increasing complexity in the qualifications required. Technological change was leading to an ‘intellectualization of occupations’ requiring VET to place greater emphasis on theoretical and general knowledge. In this context, VET was being asked to provide young people not only with technical education, but also with general knowledge and education for citizenship. These demands would lead to a strengthening of the academic dimension of VET with reforms in the content of vocational school courses, an increase in

the time spent in complementary vocational schools, and the creation of special training programs with an increased theoretical component. The debate around the creation of professional middle schools (*Berufsmittelschule*—BMS) clearly reflects the increasing complexity of the qualifications required [42–45], as do the debates on the “Improvement of the apprenticeship” led by the Grübel commission [46];

- (3) Finally, from the 1960s onwards, the public debate was also strongly influenced by questions of equal opportunities and social justice. These led, on one hand, to a questioning of the status of apprentices and justified measures aiming to bring them closer to general education students (reduction in working hours, holidays, free equipment, sport, general contents) and, on the other hand, to the adoption of measures (vocational guidance, grants, refund of travel costs, decentralization of schools) to reduce geographical and social discrimination which could hinder the free choice of a USE program for talented and well-motivated young people. Criblez [24] identifies the starting point of this debate in the 1961 OECD report *Ability and educational opportunity*, and Hess et al. [47] provide a general overview of the issue as it was considered at the time.

While these three major challenges concerned Switzerland as a whole, the responses of the cantons to them were differentiated. Indeed, we argue that the differences that we see today between the cantons have their origin precisely in the differentiated responses that the cantons gave to these three challenges. In other words, the principal lesson of our research is that, if in the first phase up to the 1950s, the degree of industrial development is decisive in explaining the differences between the cantons, from the 1950s onwards, cantonal differences emerge according to other factors that can be identified by describing the responses the cantons gave to these three challenges—responses that, as we shall see, take the form of specific VET cantonal policies.

7. Five Dimensions of Differentiation

The analysis of our sources allows us to highlight the responses to these three challenges in each canton we investigated. These responses reveal differences both in the discourse on VET and in the concrete measures adopted by the cantonal policies. These differences can be presented through a model built around five ‘dimensions of differentiation’: (1) the role of the cantonal state; (2) the role of private actors; (3) the role of vocational school; (4) the scope of measures to promote equal opportunities; and (5) the general aims of VET. These dimensions allow us, firstly, to identify the levels at which cantonal policies can stand out and how they can exploit a certain autonomy in relation to federal provisions. Secondly, they allow us to propose a heuristic theoretical framework that, beyond our analysis of three cantons, contributes to the international reflection on the determinants of the functioning and evolution of VET systems.

Figure 3 summarizes these five dimensions of differentiation and visualizes the different position of our three cantons, by placing them in a polarity between two extreme positions for all five dimensions. This representation clearly shows how GE and TI share similar positions on the five dimensions, in contrast to ZH. In the next sections, we examine these five dimensions and the positions of the three cantons more in detail. (We do not, however, enter into detail regarding the differences between GE and TI. GE and TI show considerable similarities in the development of their cantonal policies in the period 1950–1970 and clearly differ in the same aspects from ZH. Explaining their differences would require entering into more detail on the two cantonal situations, which is not possible in the limited space of this article—the article of Gonon and Freidorfer in this Special Issue of *Education Sciences* offers some keys to understanding the differences between TI and GE from an ‘educational regimes’ perspective.)

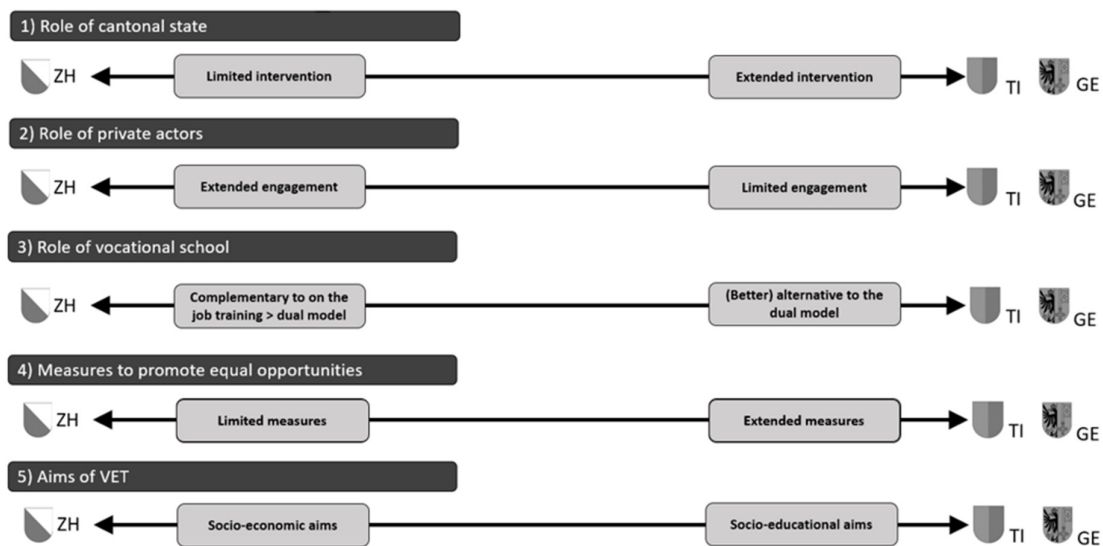


Figure 3. The five dimensions of differentiation and the positions of the cantons.

7.1. Role of Cantonal State

Our research was able to show important differences between our three cantons regarding the role of the cantonal state in the management of VET in general, and more specifically in responding to the three challenges mentioned above. Figure 3 shows how the three cantons can be placed in a polarity between limited state intervention (ZH) and extended state intervention (GE and TI). If we consider the public debate on this topic in ZH, the role of the canton was not really an issue. Firstly, the limited room for maneuver of the canton compared to the legal competencies of the Confederation is constantly underlined. For example, in the minutes of the experts' commission preparing the ZH implementation Law of 1967, we can read: "The VET system is regulated by federal law. The cantons are only responsible for implementing regulations. The cantons are no longer entitled to intervene in a rulemaking way. Their competences are only very limited" [48] (p. 9). Secondly, the discourses tend to be positive regarding the situation of cantonal VET, the federal policy framework, and the role played by private actors in the sector. In the same minutes [48], experts agreed on the "high standard" (*hohen Stand*) reached by VET in the canton (p. 15 ff.). The room for maneuver, which is considered to be limited, and the positive evaluations justify the desire not to radically change the relationship between the actors and therefore not to extend the role of the canton. In contrast, the public debate differed in TI and GE. Firstly, politicians did not hesitate to underline the room for maneuver remaining in relation to federal Law nor to push for maximum exploitation of it. A clear sign of this can be seen in the words of the TI parliamentary commission discussing the draft of cantonal implementation law who underlines that "although programs are generally established at federal level, it is hoped that the canton will adapt them to current needs and, as far as possible, expand and extend them" [49] (p. 949). And, in the same perspective, Raymond Uldry, head of the VET Office in GE, stresses how "the entry into force of the new federal law [...] empties our cantonal legislation of much of its substance and prohibits the cantonal authorities from legislating in areas governed by federal Law. It is only just and by taking certain liberties that the Geneva authorities save some avant-garde measures" [50] (p. 4). In addition to this, discourses were quite critical of the situation of cantonal VET, of the federal framework and of the involvement of private actors. Critical positions emerge from several sources, for instance, in the TI press (cf. "The problems of vocational training are on the agenda", *Libera stampa* 14.07.1955) or in the GE press (cf. "Apprenticeship at a dead end", *Tribune de Genève* 16.03.1970 or "Only a new

spirit can save apprenticeship”, *Tribune de Genève* 26.01.1970). These positions often led to an exhortation directed at the cantonal state to intervene more to ensure quality VET.

How these different discursive positions find their concretization in different concrete legal provisions can be shown by taking the example of the three cantonal implementation laws to the federal Law of 1963 (cf. ZH: “Law on the Implementation of the Federal Act on VET” (1967); GE: “Law on vocational guidance, VET and working conditions for young people”(1969); TI: “Cantonal Law on VET” (1971); see also the analysis of these three implementation laws from an ‘educational regimes’ perspective realized by Gonon and Freidorfer in this same Special Issue of *Education Sciences*). This analysis shows how, in terms of concrete provisions, ZH shows limited intervention and a narrow application of federal Law, and finally, only a few elements of a specific cantonal policy. In contrast, GE and TI use implementation laws to develop a specific cantonal policy based on a number of measures complementing federal provisions, such as the creation of tripartite commissions (canton, employers, employees), the creation of new or the enlargement of old full-time schools, the creation of practical courses, the extension of teaching hours at the vocational school, the introduction of a ‘combined’ apprenticeship (forerunner of the current ‘branch courses’), the adoption of measures to support weaker social groups, the extension of subsidies/scholarships for apprentices, etc.

7.2. Role of Private Actors

This second dimension focuses on the role that private actors play or should play in organizing the system and in responding to the three challenges facing Swiss VET. This dimension is closely related to the first, as state intervention is often linked in our sources to a satisfactory or unsatisfactory commitment on the part of private actors.

As for the previous point, we can establish a polarity between an extended engagement (ZH) and a limited engagement (GE and TI) of private actors. In this perspective, the public debate in ZH describes a rather positive situation: private actors seem to play their role correctly. The message presenting the ZH implementation Law, for instance, clearly speaks of “good experiences” in the past regarding the collaboration with various actors [51] (p. 16). The state does not need to intervene. It only has to ensure a general legal frame, monitor respect for it, and support private initiative, as claimed in an article of the *Neue Zürcher Zeitung* NZZ: “Apprenticeship should not be primarily a task of the state. Only if exploitation [of young people] were to be general should the state take care of it” (NZZ: 8.2.1954).

In contrast, in the public debate in GE and TI, there is clear criticism of the involvement of private actors, both quantitatively (not enough apprentices) and qualitatively (poor quality of training). These criticisms are reflected in the exhortation to the state to intervene both to stimulate the participation of private actors and to compensate for their deficits. For instance, Francesco Bertola, head of the VET section in TI, in a 1972 report, stressed “a lamentable lack of initiative on the part of the professional associations concerned” [52] (p. 15). In the same perspective in GE, the experts of the commission preparing the 1969 law called on the professional associations and employers “to face up to their responsibilities” and “to train a greater number of apprentices” [53] (p. 18).

In terms of concrete measures adopted in the cantons at this level, ZH, with the 1967 implementation Law, largely confirms the balance between actors, whereas in GE and TI, with the corresponding implementation laws, there is stronger state intervention both with *incentive measures* in order to stimulate private actors’ engagement (for example, with creation of tripartite commissions, cf. Article 72 ff. of the GE Law of 1969, and Article 9 of the TI Law of 1971) and *compensatory measures* to respond to the problems raised by the low level of engagement of the private actors (for example, with the extension of the role of vocational schools, cf. the concrete measures mentioned in point 7.3).

7.3. Role of Vocational Schools

The issue of the role that should be attributed to schools and school-based education in VET emerged in the debates of the time in connection with the increasing complexity of the qualifications required: the intellectualization of occupations and the importance of citizen education also made it essential to increase the theoretical and general knowledge content transmitted in a school setting. On the other hand, the increase in general education is also mentioned in connection with the desire to improve the attractiveness of VET compared to its competitor, general education schools.

The debate around the role of schools was very intense in all three cantons and in Switzerland in general. However, as with the previous dimensions, we can propose a polarity between a conception that considers school a complement to on-the-job training in the context of dual apprenticeship and a conception that considers school an alternative, or even a better alternative to dual apprenticeship. Here, too, ZH takes a different position from GE and TI. The sources in ZH show a clear defense of the dual model. The need for reform is recognized, but only for limited reforms, without questioning this model. In this perspective we can mention the positions of the school inspector in ZH, Paul Sommerhalder, who summarizes: “We consider the dual apprenticeship system with on-the-job training under the supervision of a master and complementary classes at vocational school to be appropriate and practicable, provided that certain innovations are implemented” [44] (p. 19). On the opposite, in TI and GE, we witness criticisms of the dual model and positive assessments of full-time schools. In the words of Uldry: “The era of dual apprenticeship is over” (p. 2), and in this new era, schools would play a new role. This would probably require “a fundamental change in the way we think about apprenticeship, extending compulsory schooling, extending pre-apprenticeships, creating full-time VET schools” [54] (p. 4). In this perspective, full-time VET schools should be privileged for pedagogical reasons (students find there a protected environment where programs can be better respected). Full-time VET schools are also a response to the shortage of apprenticeship positions in certain fields (cf. in TI: “Full time craft schools respond to the need to train skilled workers in sufficient numbers in a professional environment, where work is fragmented into a craft industry that too often specializes and an industry that hardly deserves the name. Here, young people cannot receive adequate vocational training, and schools must make up for this inadequacy” (*Libera Stampa*, 15.04.1957)). Finally, only at school is it possible to teach more adequately the general and theoretical knowledge required for the intellectualization of the professions (cf. in GE, the development of VET schools is “encouraged by the authorities, who are anxious to provide the economy [...] with more and better qualified staff”, and this development also responds to a social demand for education: “Young people prefer studying in a school than following a traditional apprenticeship in a company. [...] This movement is tending to accelerate with the rise in living standards and the population’s need for culture” [55] (p. 3).

These different positions are also reflected in different measures adopted at cantonal level. ZH adopts few concrete measures in this domain. We can quote two of them: first, during these years, ZH extended optional courses in vocational schools, and second, ZH participated in the development of a new program for talented individuals at the end of the 1960s: BMS (professional middle school), which provided a dual apprenticeship but with an additional day at vocational school, where theoretical and general knowledge contents were taught (on the BMS debate, see 42–46).

In contrast, TI and GE intervene more extensively in this perspective. First of all, the offer of VET full-time schools was significantly augmented, with new schools or with the expansion of existing schools (cf. *Corriere del Ticino* “Investment in people and capital of our canton for vocational schools” (*CdT* 12.05.1964). In GE, the Law confirms and strengthens the role of VET schools in Art. 32 and 33). Then, TI and GE tried in various ways to reform dual apprenticeship by increasing the proportion of class teaching: with an additional half day for some professions, with practical school courses, with the development of the ‘combined apprenticeship’, etc. (cf. GE Law of 1967, Art. 31 on the “combined apprenticeship” or Art. 57 on “special courses”. Symptomatic in TI is the adoption of an

additional half-day of vocational school for a certain number of professions, mentioned in the Report of the VET commission [52]. In this document, Bertola states clearly his position: “It is to be hoped that within a few years all apprentices will be able to take advantage of this extra half-day. For my part, however, a second full day of school is the desirable goal, and I will do my utmost to achieve it” (p. 5).

7.4. Measures to Promote Equality of Opportunity

This dimension refers to the reaction of the cantons to the third challenge mentioned earlier. From the 1960s onwards, the theme of equal opportunities and democratization of the education system became an inescapable issue in all cantons. However, as with the previous dimensions, we can establish a polarity between limited (ZH) and extended measures (GE and TI). In ZH, the debates do not clearly converge on widely shared positions and are not concretized in wide-ranging measures. On the other hand, in GE and TI, the desire to ensure equal access to post-compulsory education and to limit inequalities in education due to economic reasons is widely shared and is reflected in concrete measures.

In more detail, while in GE and TI, the public debate was strongly marked by the desire to ensure that all young people should have access to USE programs and to improve general education for all young people. This social policy aim appears clearly in the message presenting the draft of the GE Law, where we can read: “Geneva developed institutions aimed at providing everyone—even the most disabled—with vocational training tailored to their needs, correcting the consequences of social inequalities” [56] (p. 2346). Whereas in ZH, the debates tended to revolve around the need to improve training conditions for apprentices to bring them closer to the conditions of high-school students (e.g., general education contents, sports classes or holidays), with the main aim to maintain the attractiveness of VET, against the competition of general education schools, as Hans Chresta, Head of the VET Office in Zürich, states: “The apprenticeship must be reactivated as an educational option, a real alternative to general schools (Mittelschule)” (p. 6) [45]. The same positions also appear in the press: “The aim of all measures must be an upgrading of the apprenticeship compared to general schools. [...] Today, the apprenticeship is discriminated against, and therefore a general flight from it can be observed” (NZZ, 25.10.1970, p. 35).

Symptomatic of this difference between the three cantons is the debate on the differentiation (*Differenzierung*) of VET. ZH supported the development of a new apprenticeship program with more general knowledge for talented young people (BMS) and programs for less capable young people (*Anlehre*) (cf. Sommerhalder [40]). In contrast, in GE and TI, this differentiation of the programs was criticized: VET should ensure good training and extended general knowledge for all. Bertola’s position was clear: such types of programmes (BMS) could be implemented, but only after all apprentices had received three half-days of schooling. [52]. On the same issue, Uldry clearly criticizes the elitist aims of this program: “No! This selection of the best candidates is contrary to the principle of democratization of education” (Uldry’s handwritten annotation on [57] (p. 134).

However, the most important measures that were taken in this respect are the reforms of lower secondary education. Here, too, considerable differences appear between ZH and GE/TI. GE in 1962 and TI in 1974 introduced comprehensive programs at this level (*Cycle d’orientation, Scuola media unica*) in order to ensure egalitarian access to USE. Even though the public debate tackled this issue (cf. “Comprehensive school: hope and illusion” (NZZ 04.01.1970)), ZH did not implement such a comprehensive program (*Gesamtschule*). The introduction in GE and in TI of these comprehensive programs decisively influenced the choices of young people after compulsory school: the chance for all to enter in a general education school was now open, and progressively, the number of young people choosing this USE program increased in GE and TI (cf. Muller [58] on the impact of the lower secondary education reforms in GE, and Ghisla [59] for the impact in TI).

Other concrete measures could also be mentioned to show how GE and TI tackled the demand for more equal opportunities. For instance, GE and TI introduced repetition courses for young people with poor records and special programs for young people with disabilities. The financial efforts of GE and TI in terms of scholarships and grants were higher, in the 1960s, than that of ZH [60]. Finally, a highly symbolic measure: vocational schools were free of charge in GE (GE Law 1969, Art. 25) and TI, the latter even refunding the transport costs of all apprentices obliged to travel to vocational schools and contributing to the canteen costs (see [52] (pp. 5–6)), whereas the ZH Law of 1967 still determines that apprentices may be required to pay for their own school fees and materials (cf. ZH Law of 1967, Art. 32. In practice, very few apprentices paid these charges out of their own pockets. They were covered on a voluntary basis “in 95% of the situations by employers” [48] (p. 6)).

These measures show a stronger propensity in GE and TI to attribute to VET not only economic policy aims but also sociopolitical aims, as is underlined below when considering the last dimension.

7.5. Aims of VET

If we take a general look at the expectations toward VET and at the aims attributed to it in the cantonal debates, we can also see some interesting differences that lead to a fifth polarity between socioeconomic aims and socio-educational aims, which allows us to highlight how the three challenges mentioned above have influenced cantonal policies in different ways. In all the cantons, VET must respond to the demand for skilled labor and participate in a movement to improve the cultural level of the entire population. However, within the cantons, these aspects acquire different tonalities. ZH puts more emphasis on socioeconomic goals. VET should ensure entry into the world of work by meeting the labor needs of companies; for this purpose, its attractiveness must be improved to find a sufficient number of motivated and talented young people. In other words, only by ensuring the proper integration of young people into the world of work can VET contribute to the development of society. In this respect, the themes of equality and of the importance of general knowledge are regularly integrated within arguments for increasing the attractiveness of VET and reacting to competition from general education schools.

In GE and TI, VET at the USE level tends rather to be conceived as a time where it is possible to complete compulsory education, ensuring an adequate basis of general knowledge on which to build future specializations. Symptomatic of this position are the words of the GE State Council: “VET should resolutely move away from hasty specializations. In fact, the need for tomorrow’s professionals to adapt constantly to technical and economic developments militates in favor of broad-based training based on the principle of a common core and progressively oriented towards specialization” [61] (pp. 3740–3741) (on this point, see also Bertola [62]). VET is also a place where, under the control of the state, equal opportunities and a general knowledge for all young people should be ensured. More than the answer to a socioeconomic need for a qualified workforce, the general improvement of the training conditions and of the level of education of all young people is at the center of the discourses. In the words of Uldry: “The primary task [of VET] is not to teach a profession, the techniques of which are constantly changing, but to educate the young person, who must be helped to develop, adapt to the world of work and respect its rules” [63] (p. 2). In this respect, the competition between VET and general education schools does not appear so strongly as in ZH, as the two programs participate in a general improvement of the level of education of all young people.

Finally, another symptomatic issue that may also have influenced these contrasting tonalities is the different institutional attachment of VET in the three cantons: in ZH, VET is attached to the Department of Economy, whereas in TI, it was attached to the Department of Education. In GE, vocational schools were under the control of the Department of Education, whereas the apprenticeship was under the control of the Department of

Economy, but with a unique cantonal office for VET (Office d'orientation et de formation professionnelle—OOF).

To conclude, we can highlight how these different positions are reflected in different policies, the characteristics of which can be briefly summarized as follows: in ZH, limited role of the state, broad participation of private actors, limited role of VET schools, and limited social measures; and in GE and TI, extended role of the state, limited involvement of private actors, increased role of VET schools, and extended social measures.

8. Conclusions

The analysis we have just presented allowed us to identify different responses from the three cantons to the challenges that concerned VET in the period between 1950 and 1970. It highlighted how differences emerge when we consider five dimensions of differentiation that describe the institutional room for maneuver of the cantons. If we now relate this analysis to the development of dual apprenticeship in the three cantons, we can identify a relationship between a certain positioning in the five dimensions and a positive or negative development of the sector. In other words, we can say that a limited role of the state, a limited role of school, a broad involvement of private actors, limited equal opportunity measures, and the stress placed on socioeconomic aims constitute the background to a positive development of dual apprenticeship in ZH. In contrast, a more extensive role of the state, an expanded role of school, a limited involvement of private actors, extended equal opportunity measures, and the stress placed on socioeducational aims constitute the background to a limited development of this pathway in Ticino and even to its weakening in Geneva.

The elements we have identified need to be further refined, in particular by extending our analysis to other cantons. However, these conclusions are already interesting. The articulation of the five dimensions offers a theoretical framework that allows us to account for the development of cantonal VET systems in all their complexity, thus confirming the interest that a multidimensional approach may attract. The detailed analysis of cantonal differences also allows us to better understand the influence of certain factors on the development of VET systems. In particular, our research highlights how important the role of private actors is in the functioning of the system and how delicate state intervention in the domain can be, be it with more school or with more social policy measures. Moreover, our research clearly shows how the general aims attributed to VET can vary between cantons even though VET is regulated at a federal level.

Beyond the study of our three cantons, our approach proposes a theoretical framework on key dimensions of VET systems that can undoubtedly contribute to the international debate on the issue. In this perspective, these five dimensions largely confirm the relevance of the theoretical framework proposed by Busemeyer and Trampusch and their four 'neuralgic points': "*the relationship between firm autonomy and (semi-)public monitoring (who controls skill formation?), the relationship between firm-based and school-based vocational education and training (who provides skill formation?), the financing of skill formation (who pays for skill formation?) and the relationship between vocational education and training and the general education system*" [8] (p. 16). Our approach differs in that it distinguishes between national and regional 'state' and proposes more profound attention to socio-pedagogical aspects, notably in dimensions of differentiation 3 and 4. The fifth dimension also opens the way to an analysis of the differences between VET systems based on what the expected aims of VET are [64] and the delicate balance between economic and social aims [30,31,65]. At the same time, this model offers a higher level of generalization than models such as CEDEFOP [9] or SDC [10], which facilitates its use in international comparisons.

Finally, we cannot conclude our article without taking a stand on the differences that emerge between the Latin and German-speaking cantons. Our analysis shows a clear convergence between the cantonal policy of TI and that of GE in their reaction to the challenges affecting VET and systematic differences between ZH and the two Latin cantons. Does our analysis show a German way and a Latin way of carrying out VET? Our research

cannot clearly answer this question yet. A more comprehensive study, involving all the other 23 cantons, would be necessary. What we have been able to show, however, is that the cantonal differences between the Latin and German-speaking cantons can be analyzed through these five dimensions, which gives us a much more precise understanding of them than the usual explanations which often refer simply to ‘cultural differences’, without really being able to describe them concretely. From our perspective, if we are to speak of ‘cultural differences’, these must refer to specific positionings of the cantons in the five dimensions identified here.

Author Contributions: Conceptualization, L.B. and J.V.; methodology, L.B.; investigation, L.B. and J.V.; writing—original draft preparation, L.B.; writing—review and editing, L.B. and J.V. All authors have read and agreed to the published version of the manuscript.

Funding: This paper is based on a research project funded by Swiss National Science Foundation, PN 100019_179203. “L’évolution de la formation professionnelle en Suisse entre cadre fédéral et spécificités cantonales”, in which Lorenzo Bonoli, Philipp Gonon, Jackie Vorpe and Lena Freidorfer are participating. (<https://p3.snf.ch/project-179203> accessed on 27 September 2021).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: All sources used are public. They are available on the internet, in Swiss libraries or in federal or cantonal archives. The sources relating to the Confederation can be consulted in the Swiss federal Archives (<https://www.bar.admin.ch/bar/de/home.html>, accessed on 27 September 2021). The sources that relate specifically to the Canton of Zurich can be consulted in the State Archives of the Canton of Zurich (<https://www.zh.ch/de/direktion-der-justiz-und-des-innern/staatsarchiv.html>, accessed on 27 September 2021). For Geneva, this would be the State Archives of the Canton of Geneva (<https://ge.ch/archives/>, accessed on 27 September 2021) and for the Canton of Ticino the following archive (<https://www4.ti.ch/decs/dcsu/asti/asti/>, accessed on 27 September 2021).

Acknowledgments: We thank Philipp Gonon and Lena Freidorfer for their precious feedback on the draft of this article as well as the reviewers who helped us to improve our paper.

Conflicts of Interest: The authors declare no conflicts of interest.

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