

Bielsko: The Education Centre for Industrial Production between Austrian Silesia and Galicia at the Turn of the Nineteenth and Twentieth Centuries*

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vol. 8, 2019, 2, pp. 22-38

DOI: <https://doi.org/10.33542/MAD2019-2-02>

This study deals with the issue of industrial education on the Silesian-Galician border in the late nineteenth and early twentieth centuries. Against Cisleithanian-wide trends it depicts the establishment of the so-called state industrial school (*Staatsgewerbeschule*) in the town of Bielsko in the 1870s and the development of this educational institution, which stood at the top of the system of schools for professional education of the time, until as late as the outbreak of the First World War. Among other things, it focuses on the founding of this important school, its organizational transformations and the composition of its students. In the study Bielsko is presented as one of the most prominent places in the Cisleithanian part of the monarchy from the aspect of educating a qualified workforce at a time of advancing industrialization and the socioeconomic changes it induced.

Keywords: Bielsko. Austrian Silesia. Galicia. Education. Industry. 19th Century. 20th Century.

Introduction

The submitted study deals with the issue of education for industrial production in the second half of the nineteenth and the early twentieth centuries, an issue which has been, mainly by Czech historians, reflected only minimally.¹ In the period under consideration the modernization processes, already underway, were becoming more intense, significantly influencing the form of the professional training of workers for both small-scale production and the centralised forms of mass production. What seems especially significant are the effects of the Industrial Revolution (the introduction and spreading of new technologies, the innovation in working procedures, the secundarization of the economy, etc.), the changes in the demand for certain commodities and workforces, increased due to the liberalization of the market and the improvement of transportation possibilities, and the more precise legislation regulating economic life and social transformations. The new – modern – society that was developing did not only have a new structure, but also other possibilities, ambitions and principles of functioning. It was precisely in this period that, according to Fritz Ringer, the relation between a part of the educational sector and the economic sphere was introduced, while certain forms of science and technical education were becoming at least one of the causes of further economic growth.² All those involved were to adapt to the new conditions: employers, workforces and even the state, which had been, until

* This study has been financially supported by the Czech Science Foundation (GAČR) grant reg. no. 18-04624S entitled *Vzdělání, hospodářství a společnost 1848–1914: Socioekonomické souvislosti rozvoje profesně-vzdělávací infrastruktury v rakouském Slezsku*.

1 The above-mentioned has two mutually related consequences: 1) a marginal reflection of the issue of education in the modern Czech historical production related to the economic and social aspects of the development of the so-called long nineteenth century; 2) what remains the factual support of the current Czech production still being only older works, which – however valuable they might be – show deficiencies from the aspects of methodology and heuristics. See: GRUBER, *Politika*, 627–840; DVORÁK, *Vznik a vývoj*; ČERNOHORSKÝ, *Vývoj*, 9–43.

2 RINGER, *Education and Society*, 1–5.

then, active only to a minimal extent. It is no coincidence that it was precisely in this period that the policy of the state dealing with professional education was formed, reacting both to the economic and social transformation and the economic competition from abroad. The motives for the state's engagement, forced by circumstantial pressure, were not only economic, but partly also social-political, as the prospering economy stimulated by education was to help preserve social stability and public order. In this respect the Habsburg Monarchy was surpassed by countries like France, Great Britain and some German states (e.g. Württemberg, Prussia and Bavaria). It is therefore no wonder that these countries were where the Austrian state drew inspiration from in the second half of the nineteenth century when forming its own system of professional education.³

The aim of this study is to introduce the role and importance of the so-called state industrial schools (*Staatsgewerbeschulen*), which found themselves at the top of the Austrian system of vocational industrial education, created under state supervision from the 1870s. The general development trends will be depicted through the example of one specific school, which was established in the mid-1870s in Bielsko on the border of Silesia and Galicia. It is precisely the placement of a state industrial school in Bielsko, a town situated on the border of one of the most developed parts of Cisleithania – Silesia (and, within it, the nearby developing industrial Ostrava-Karviná region) – and the south-west part of the considerably more backward Galicia which constitutes one of the specifics of this educational institution.⁴ In three sections the study will depict, respectively, the basic aspects of the development of industrial education in Cisleithania up until the First World War, the circumstances of the establishment and development of the school in Bielsko and, last but not least, also the characteristics of its students (territorial, ethnic and religious origins). The basis of the text will be archival and printed sources which, until now, have been used by researchers only minimally or not at all. While the archival sources come from the Provincial Archive in Opava, the printed sources (period magazines, annual school reports, journalism, school statistics) are deposited in various libraries both in the Czech Republic and abroad (Olomouc, Opava, Brno, Prague, Vienna).

State industrial schools and the formation of an industrially-oriented infrastructure of professional education in Cisleithania from the mid-nineteenth century until the First World War⁵

A systematically and conceptually grounded infrastructure of professional education was formed in the Habsburg Monarchy only in the 1870s and the first half of the 1880s,

³ For more details see: ENGELBRECHT, *Geschichte*, 7–85, 193–220; SCHERMAIER, *Fachschulen*. WESTRITSCHNIG, *Berufsbildung*. For a useful comparison with mentioned countries see: BLANKERTZ, *Bildung im Zeitalter*; DAY, *Schools and Work*; LECHNER – PÖGGELER, *Allgemeinbildung und Berufsbildung*.

⁴ The text is a contribution to the history of Cisleithania in the second half of the nineteenth and early twentieth centuries. Like other Czech and foreign authors (Milan Hlavačka, Milan Myška, Gary B. Cohen, Karl Josef Westritschnig, Josef Schermaier, etc.) I use shortened and, as in the practice of the period, commonly used terms for territorial units (Silesia, Galicia, Moravia, Bohemia, etc.) within the administrative borders that these parts of Cisleithania had in the period addressed. For more details about the function of Bielsko (Bielsko-Biała) see: PANIC, *Bielsko – Biata*.

⁵ This text will leave aside the educational possibilities focused on trade and agriculture. These are discussed in more detail e.g. in: LOM, *Vývoj vzdělávání*, 5–97; FABER, *Entstehung und Entwicklung*; RAŠTICOVÁ, *Zemědělské školství*; WESTRITSCHNIG, *Berufsbildung*, 172–176, 276–285, 517–528, 558–562; KADLEC, *Rozvoj předlitavského obchodního školství*, 33–55.

and it must be said that in the Cisleithanian and Transleithanian part this process took place under very different circumstances.

The above-mentioned does not mean that previously there had existed no educational possibilities preparing people for the carrying out of craft and trade activities, or for the finding of employment in the developing industrial production. While some alternatives had ceased to exist over the years, others remained until the fall of the monarchy in 1918. Such was the case regarding the progression typical of guild organizations, apprentice – journeyman – master, which remained as a model of qualification, professional and socioeconomic progression even after guilds had ceased to exist as a result of the adoption of liberal trade legislation in the late 1850s (*Gewerbeordnung* in 1859). The reason was that despite the increasing study possibilities, practical education with the so-called *Lehrherrn* remained an essential part of the qualification profile of the upcoming generation of Cisleithanian sole traders, small-scale producers and merchants even in the early twentieth century. The Austrian legislation took into consideration vocational certificates as certification of completing the attendance of extracurricular lessons even in the period preceding the First World War.⁶

After the introduction of Maria Theresa's school reforms (1774), it was also possible to acquire certain competencies necessary for one's future profession in elementary education – this was the only educational segment where the state was engaged in matters of professional education before the mid-nineteenth century. Until the reorganization of elementary education in the late 1860s, there existed the not very functional "revision lessons" (*Wiederholungsstunden*), taught on Sundays as a double period for young adults up to the age of 20 who had already completed the required compulsory school attendance. At the same time the higher level of elementary schools, the so-called *Hauptschulen*, also ceased to exist, schools where, if possible, subjects taking into account the future professional aspirations of the students (accounting, drawing, construction, mechanics, etc.) had been taught.⁷

As early as in the period before the mid-nineteenth century, several vocational schools of varying focus and organization of classes were established. It was the initiative and finances of (professional) interest associations and private persons that played the decisive role in their establishment. The schools that held a special place among them were *Realschulen*, which were two- to three-year schools with classic day lessons and a diverse curriculum and purpose. Some of them served as preparatory schools for studies at polytechnic schools (Vienna, Prague, Graz, Trieste), while some had the character of independent schools for the education of experts carrying out jobs of a technical or agricultural nature, or for office workers in these fields (Rakovník/Rakonitz, Liberec/Reichenberg, Brno/Brünn, Lviv/Lemberg, Brody).⁸ In reaction to the termination of prohibitive tariff measures and from fear of the impact of foreign competition on Austrian industry, in 1851 the state made considerable modifications to the organization and purpose of the then *Realschulen*, reforming them into three- to six-year secondary schools focusing on professional education and teaching construction, accounting, engineering, chemistry, drawing, etc. *Realschulen* designed in this way soon spread across the entire monarchy, preparing their graduates both for starting

6 WESTRITSCHNIG, Berufsbildung, 238–239. REBEC, Úplný Řád živnostenský.

7 KÁDNER, Vývoj, 72–74. ENGELBRECHT, Geschichte, 196. GRUBER, Politika, 678. ČERNOHORSKÝ, Vývoj, 19.

8 See: KADLEC, Základní aspekty, 27.

work in industry and for further studies at vocational universities.⁹ *Realschulen* lost their character of institutions focusing on professional education in 1867–1868 when, following criticism of their curricula and in connection with the reorganization of polytechnic schools, they transformed into schools focusing on general education, i.e., in fact, preparatory schools for studies at vocational universities. Therefore, at a time when economic growth was culminating, the unified and state-regulated and systematized school professional training paradoxically lost its basic element without adequate compensation, which fundamentally disrupted the creation of a qualified workforce.

In the 1860s the state started to financially support vocational schools established by other founders. What played the decisive role in this process was the renewal of the Ministry of Trade (1861), whose initiatives and subsidies helped the birth of a number of textile, glass, ceramics and other schools. From the late 1860s the increasing number of field-profiled vocational schools were joined by a new type of school – the so-called professional development schools (*Fortbildungsschulen*), designated as for those who were already professionally active or were in the process of practical training in workshops. These schools differed from other schools with classic day lessons in that their lessons were concentrated into the evening hours of workdays and into Sunday mornings. The organization of *Fortbildungsschulen* was first anchored in legislation in Lower Austria (1868), while a Cisleithanian-wide regulation, with partial changes modifying the form of these schools until the fall of the Habsburg Monarchy, was issued in 1883.¹⁰ The rise of industrial *Fortbildungsschulen* had two fundamental consequences:

- 1) two lines of management of industrial education were introduced: the Ministry of Trade supervised field-profiled vocational schools and the Ministry of Education (*Ministerium für Kultus und Unterricht*) supervised industrial *Fortbildungsschulen*. This led to disputes about competencies and uncoordinated events; in the hope of overcoming them, a joint ministerial committee for issues of industrial education was set up (1872–1874). The two lines of management of industrial education were only removed by the centralization of this educational segment into the management of the Ministry of Education in 1882;
- 2) a so-called dual system was introduced in the education of apprentices: apprentices gained the necessary experience in school workshops or in real company conditions with the so-called *Lehrherrn*, while theoretical education was provided by industrial further education schools (further divided into general and field-profiled). This system remained in practice until the Habsburg Monarchy ceased to exist.¹¹

Although the initiative and both material and financial support of non-state agents significantly influenced the shape of the Cisleithanian infrastructure of professional education, it was the attitude of the state that played the decisive role. Despite the fact that the Austrian state had already started to engage in this field in the 1860s, we can only speak of the formation of a state policy of industrial education from

9 In the school year 1852/1853 there existed 22 *Realschulen* in the Habsburg Monarchy, while in 1865/1866 this number had already risen to 76. *Statistische Uebersicht* (1852/53), 32–35. *Statistische Übersicht* (1865/1866), 24–31.

10 For more details about the development of industrial *Fortbildungsschulen* in Cisleithania, see: KADLEC, *Průmyslové pokračovací školství*, 15–34.

11 ENGELBRECHT, *Geschichte*, 199. SCHERMAIER, *Fachschulen*, 8–9.

around the mid-1870s. It was precisely at this time that the first programme materials were created and a process was launched which was to gradually escalate until the end of the period considered. During this process, industrial education was unified and institutionalized, the granting of subsidies (tied to the meeting of conditions dictated by the state) was systematized, it was agreed that vocational schools would be transferred to state management and new state schools established, the legislation regulating the running of industrial education was improved, and school equipment, didactic aids and the education of teachers was reorganized. Aware of its importance, the state purposefully took control over this educational segment, forming it to its liking with the aim of supporting domestic industrial production and ensuring social stability. Of all the causes of and motives for an intensive and systematic engagement of the Austrian state in industrial education, the most important seem to be these: the efforts to maintain the competitiveness of Austrian industry or, more precisely, education focused on training for industrial production (in this respect, shortcomings in comparison with developed countries were revealed, e.g., by the World's Fair in Vienna in 1873); the necessity to react to the economic crisis after 1873 and the efforts to stimulate the economy by, among other things, creating a qualified workforce; political pressure from new political elites, professional interest groups, employers and employees; and the reaction to the crisis of traditional crafts and the so-called cottage industries which, in some regions, were in danger of falling into social unrest.¹²

A distinct manifestation of state engagement in the field of industrial education and its efforts to conceptually grasp this educational segment were the so-called state industrial schools (*Staatsgewerbeschulen*), the first of which were established in the first half of the 1870s.

Until the end of the period under consideration these schools, clearly inspired by the German model, constituted the basic pillar of the system of schools which were to provide the Austrian economy a sufficient workforce both for mass production and for small-scale production. They fulfilled the roles both of industrial education centres of supra-regional significance and of model schools integrating various educational levels and forms of teaching. Their bases were the so-called higher industrial schools (*Höhere Gewerbeschulen*) and schools for masters/foremen (*Werkmeisterschulen*). These four-year and two-year (respectively) day schools were further complemented by affiliated vocational courses and *Fortbildungsschulen* with shortened classes on workday evenings and on Sundays. Besides these courses, we must also mention holiday courses for teachers at further education schools. Depending on the local conditions, an internal differentiation and specialization of the schools was being formed: while some schools were shaped to be construction-technical or engineering-technical in focus, in other schools a chemical-technical or art-industrial focus was preferred. The so-called state industrial schools were established in land centres and in places with an increased concentration of industrial activities.¹³

The system of industrial education in Cisleithania, formed under state supervision by the 1880s, looked like this:

12 For a useful perspective of contemporaries, see: TOBISCH, *Das Kleingewerbe*; DUMREICHER, *Die Pflege*; DUMREICHER, *Das gewerbliche Unterrichtswesen*; WILDA, *Die Organisation. Zur Frage der Erziehung*. For comparison: ENGELBRECHT, *Geschichte*, 12–25.

13 More detail in: WESTRITSCHNIG, *Berufsbildung*, 308–381.

- 1) schools with all-day classes – vocational schools for the individual industrial branches (*Fachschulen*; textiles, wood/stone processing, sculpture, art, glassmaking, for girls),¹⁴ general craft schools (*Allgemeine Handwerkerschulen*, from 1885, preparing young people for learning craft trades)¹⁵ and multifunctional *Staatsgewerbeschulen*.¹⁶
- 2) schools/courses with evening and Sunday classes – industrial *Fortbildungsschulen* for apprentices (for individual fields or general for different fields)¹⁷ and special vocational courses for professionally active craftsmen and those employed in mass production. These schools and courses were usually connected either to schools providing basic education (*Allgemeine Volksschule, Bürgerschule*) or to other vocational schools.¹⁸

Despite the distinct quantitative and qualitative progress in education for industrial and craft production, in the early twentieth century there was discontent with the existing form of vocational schools. The reform of various types of schools (mainly *Fortbildungsschulen* and textile schools) was called for not only by teachers and experts in education, but also by representatives of the economic sphere. While some remedial action was indeed taken, the implementation of further changes was prevented by the outbreak of the First World War.¹⁹

The birth of the centre for industrial education in Bielsko and its development until 1914

The industrial school in Bielsko ranks among the very oldest institutions of its kind in Cisleithania. It was opened during the first wave of school establishing in the early 1870s, specifically in 1874, thus joining the already established industrial schools in Vienna, Graz, Brno, Chernivtsi, Prague and Turnov.²⁰ The foundation of the school was accompanied by three phenomena typical during the establishment of similar schools in Cisleithania. Firstly, the initiation for the establishment of the school came from the state, which turned in this matter to the local school authorities and professional

14 In the school year 1913/1914 there existed a total of 229 vocational schools in Cisleithania focused on one field, including girls' schools of various types, and according to incomplete statistics they were attended by almost 34,000 male and female students. *Zentralblatt*, 260–312.

15 In the school year 1913/1914 there existed seven schools of this type, attended by 2,224 students. *Zentralblatt*, 315–316.

16 By the school year 1913/1914 a total of 29 *Staatsgewerbeschulen* had been established in Cisleithania (Vienna – 4, Linz, Salzburg, Graz, Klagenfurt, Ljubljana, Trieste, Gorizia, Innsbruck, Trento, Prague, Ústí nad Labem, České Budějovice, Chomutov, Pardubice, Pilsen – 2, Liberec, Smíchov, Brno – 2, Zábřeh, Bielsko, Lviv, Kraków, Chernivtsi) along with one non-state industrial school (Vienna – Neustadt, Lower Austrian Land Industrial School). On the level of these schools there were two elite schools for the textile industry (*Lehranstalt für Textilindustrie*) in Aš and Brno. According to the incomplete statistics for the school year 1913/1914 (the data for five institutions are missing), just before the First World War these schools were attended by almost 15,000 students (14,848). *Zentralblatt*, 245–259.

17 In the late nineteenth and early twentieth centuries, the distribution of school education for apprentices expanded considerably. In the school year 1913/1914, the 1,538 Cisleithanian *Fortbildungsschulen* were attended by approximately 171,000 persons. *Zentralblatt*, 317–319.

18 For a more detailed introduction of the individual types of vocational schools, see: SCHERMAIER, *Fachschulen*, 39–240.

19 See: WEIGNER, *K reformě. ČERNÝ, Nutná reforma*; HAMANN, *Referat*, 63–118; GRUBER, *Politika*, 772–793.

20 DUMREICHER, *Die Pflege*, 9–16.

associations of industrialists (*Bielitz-Biala'er Gewerbeverein*).²¹ In addition, later it was also the town hall in Bielsko that actively engaged in the matter of establishing the industrial school (material expenses and services connected with running the building). Secondly, in the initial period of its existence the school experienced a profound transformation, which fundamentally changed both the organization and content of the lessons. As we will show below in more detail, in the case of the industrial school in Bielsko this period can be delimited by the years 1874 and 1882, when it gained the form which would then characterize it until the end of the period considered. Thirdly, the potential of local institutions for professional education was made use of, some of which were integrated into the industrial school.

Why had the Silesian town of Bielsko been chosen over other towns? In the early 1870s, the strategy of the state was to establish industrial schools in the crownland capitals or, alternatively, in industrial centres, which offered the necessary demand for education of this focus.²² In this context Bielsko seemed like a logical choice, as it was an industrial locality with a textile production tradition and developed engineering. Besides, Bielsko played the role of the supra-regional education centre, where a *Gymnasium*, a *Realschule* and an educational institute for primary school teachers (*Lehrerbildungsanstalt*) were situated.²³ A higher concentration of teachers may have played a certain role in the considerations, as in this way the essential need for the teaching of general educational and scientific disciplines could be covered. What had apparently played the key role was Bielsko's location. Situating the industrial school here considerably increased the distribution of technical education on the Silesian-Galician border, as in the 1870s the nearest schools of this kind had existed only as far away as in Brno and Kraków. In addition, directly in the town and the neighbouring Biata, and in the adjacent region and, in particular, in the nearby Ostrava region there existed a considerable demand for a qualified workforce for the developing industry, which it was necessary to saturate as the previous "import" of experts from other Cisleithanian regions and from abroad was no longer sufficient. However, the vote to place the school in Bielsko had not been unanimous. Serious consideration had also been given by the Minister of Education to establishing the industrial school in the neighbouring Biata. Although there existed important arguments for the latter place (spatial, etc.), in the end the decisive recommendation of the ministerial committee was in favour of Bielsko. The reason was the concern that Biata, which, from the administrative aspect, belonged to Galicia, would not, in the long term, guarantee maintenance of German as the language of teaching, which was considered crucial for didactic reasons. What also played a large role was the existence of a weaving school in Bielsko, which was expected to become incorporated into the industrial school in the future.²⁴

When the industrial school in Bielsko was opened in autumn 1874, it consisted of a construction-technical and an engineering department, which were further divided into a preparatory course, a secondary and a higher school. While the preparatory and higher school were formed of two five-month courses, the secondary school had three of them. It was a classic school with day lessons, always taking place from Monday to Saturday. It must be added that the individual daytime courses were being opened

21 Jahresbericht (1872), 266.

22 DUMREICHER, Die Pflege, 7.

23 PANIC, Bielsko – Biata, 280–294.

24 DUMREICHER, Die Pflege, 16. Jahresbericht (1872), 266.

gradually and that the preparatory school lasted only until 1877.²⁵ The institution only gained the form typical of the school until the end of the Habsburg Monarchy after its reorganization in 1880–1882, which occurred in reaction to the unsatisfactory number of students indicating that the industrial school did not quite correspond with the needs of the region.²⁶ During the transformation, the former school was replaced by an institution comprising two basic parts with day lessons: a two-year school for foremen (*Werkmeisterschule*) and a four-year higher industrial school (*höhere Gewerbeschule*), where both schools were further divided into an engineering-technical and a chemical-technical department. In the school year 1882/1883, the former incorporated the local weaving school (established in 1865), while a year earlier this educational institution, already known as the *Staatsgewerbeschule*, had also incorporated the local industrial *Fortbildungsschule* (established in 1870). Thus the reorganization of the school, which took place in the early 1880s, made use of the teaching staff and spatial potential of the older educational institutions in the town, which, for that matter, had already been expected a decade earlier. In addition, a commercial department was opened as part of the school (from 1891 the status of a trade *Fortbildungsschule*), where, like at the industrial *Fortbildungsschule*, only a few lessons a week were taught, on Sundays and workday evenings. In the early 1880s the above-mentioned educational alternatives were supplemented by eight special courses focused on engineering, wood processing, construction and chemistry-technology (fabric dyeing).²⁷ Later, the most striking changes in the organization of the industrial school in Bielsko included the weaving, dyeing and final treatment fields of study breaking off and becoming special parts of the industrial school, and the widening of the offering of affiliated courses with, among other things, courses for girls and holiday courses for *Fortbildungsschulen* teachers. The industrial school in Bielsko thus served not only as a centre of industrial education in the strict sense (for education for industrial production and craft and partly also for trade), but also as a training centre for those teaching at vocational schools. Like other educational institutions of this kind in Cisleithania, in the late nineteenth and early twentieth centuries, the industrial school in Bielsko could therefore be characterized by a diverse internal structure and a colourful palette of fields of study as well as various forms of study.²⁸

On the most general level the industrial school in Bielsko was to provide the theoretical basics for various crafts and industrial branches and to educate its students practically as much as was needed. As far as educational goals were concerned, this multifunctional school was to interconnect the varied educational institutions focused on industry and crafts, to deal with the lack of qualified experts in industry, to educate, in compliance with the needs of the time, independent sole traders and entrepreneurs, and thus to generally boost the economy at least on the regional scale. With respect to its placement in Bielsko, those that were to profit from the local industrial school were Silesia, south-west Galicia and north-east Moravia, which all lacked an educational institution of this kind. The purpose of the school had changed and widened since

25 See: Zemský archiv v Opavě [Provincial Archive Opava] (hereinafter ZAO), fund (hereinafter f.) Zemská školní rada Opava [Provincial Education Council Opava] (hereinafter ZŠR), cart. 514b, sign. 27.

26 Das gewerbliche Schulwesen in Schlesien, 5.

27 Das gewerbliche Schulwesen in Schlesien, 8.

28 See: Oesterreichische Statistik (1889/90), 64–69; NEUBAUER – DIVIŠ, Jahrbuch, 274–288; Jahrbuch des gewerblichen Unterrichtswesens (1913–1914), 59–82, 158–206.

its establishment in connection with the organizational changes of the early 1880s. Originally the school served only those who were professionally active (fitters, masters, workshop managers), to whom it provided adequate theoretical education as part of its secondary level and, in its higher level, that education essential either for the passing of various construction examinations or for leading machine shops.²⁹ Regarding the period after the reorganization, it is necessary to distinguish the purpose of the individual parts of the industrial school. The higher industrial school prepared its graduates mainly for leading positions in the establishment of larger factories, whereas the school for foremen was designed for independent craft masters (*Gewerbemeister*) and for workshop masters (*Werkmeister, Werkführer*). While both aforementioned parts of the school connected the representatives of different focuses or related professions, the special courses had a more clearly defined learning objective. They were intended for the improvement of individuals in a specific craft and technical drawing in accordance with recent technical and technological progress. The industrial *Fortbildungsschule* was intended mainly for apprentices, while the so-called commercial department served the industrial school students and those who wished to broaden their skills with knowledge related to trade activities.³⁰

The diverse educational tasks of the school corresponded with the different conditions for acceptance to the individual parts,³¹ and the different forms of study (classic day lessons versus evening/Sunday lessons) as well as the content of the lessons. The curriculum of the industrial school in Bielsko had changed in relation to the organizational changes, which can be documented with regard to the example of the school years 1875/1876 and 1889/1890. Here we shall focus on the two highest educational levels of the school – the so-called higher industrial school and the school for foremen – as the industrial *Fortbildungsschule* and commercial department that were added later complied with regulations valid for *Fortbildungsschulen*.³² We have stated above that at first the school was divided into a construction-technical and engineering department, which were further divided into a preparatory school, a secondary school and the so-called higher school. In the preparatory school of each department a total of 36 lessons were taught every week, where the following subjects were, for the most part, common to both departments: German, calligraphy, geometric drawing, mathematics, ornament drawing and geometry. While the students of the engineering department went on to learn machine drawing, the students of the construction-technical department learnt to draw architecture. What was typical of the preparatory school lessons was the development of drawing competencies – various types of drawing took up 2/3 of the lessons. The number of lessons at the two higher levels of the school was rather excessive as there were 56 lessons a week, always from Monday to Saturday from 7 a.m. to 12 noon and from 2 to 7 p.m. Generally it can be said that

29 ZAO, f. ZŠR, cart. 514b, sign. 27, the concept of the school programme for the school year 1874/1875. Zur Frage der Erziehung, 3.

30 See: Jahres-Bericht (1881–82), 11. Jahres-Bericht (1889/90), 33, 38, 90.

31 While for acceptance to the higher industrial school a quality general education basis of the applicants was necessary (corresponding to the level of the first four years of the Gymnasium or Realschule), the school for foremen required sufficient experience (originally two, later three years). In order to be accepted to either of the basic parts of the school, it was necessary to sit an entrance examination. The specific conditions of acceptance applied to vocational schools focusing on weaving, dyeing and final treatment. NEUBAUER – DIVIŠ, Jahrbuch, 57–59, 78–79.

32 KADLEC, Průmyslové pokračovací školství, 18–19, 28.

even here considerable emphasis was put on drawing, geometry (including descriptive geometry) and modelling, i.e., skills which were in considerable demand in the industry of the time. Other subjects taught in the construction-technical department included mathematics, the study of building constructions, German, *Technische Naturlehre* (a combination of physics and chemistry), the study of building materials, mechanics, chemistry, design making (*Entwerfen*), cost calculation and accounting. In compliance with its focus, at the secondary school of the engineering department the main subjects were the study of machines and trigonometry, while at the higher school the curriculum included not only technical subjects (technology, shading, analytic geometry) but also general subjects (geography, history).³³

In the curriculum of the so-called higher industrial school, from the late 1880s there was a tendency towards a gradual specialization of the students and an emphasis on the interconnecting of technical presentations with practical demonstrations and activities. What is evident is the complexity of the technical knowledge as well as a decrease in the originally excessive number of lessons. In the individual years of the four-year studies, 35–39 lessons a week were taught. In the first year, common both to students of the engineering-technical and the new chemical-technical department of the school, seven subjects were taught (German, geography, algebra, geometry and geometric drawing, experimental physics, chemistry, drawing/*Freihandzeichnen*). In the second year the students also started studying machine drawing and, most importantly, the classes were divided into the individual departments. The students with an engineering-technical focus had an increased number of mathematics lessons and a high number of descriptive geometry lessons, whereas the students of the chemical-technical department had more chemistry lessons, including practical lessons in a laboratory and presentations about mineralogy and geology. Studies in the last two years took place almost separately on the basis of the focus of the students; only German, history and geography remained as common subjects. Almost a half of the weekly number of lessons at the engineering-technical department was taken up by engineering, where the students learned the construction of various machine parts as well as whole machines, engines, compressors, etc. Other subjects included mathematics, theoretical and applied mechanics, chemical technology, construction, mechanical technology, statics and dynamics, and the study of surveying. At the chemical-technical department over a half of the weekly number of lessons was taken up by practical lessons in a laboratory, complemented by theoretical presentations about chemical and mechanical technology, mechanics, engineering, construction and analytical chemistry. In addition, the studies at the higher industrial school were concluded with a school-leaving examination, whose passing was tied – like in other secondary schools – to the right to one-year voluntary military service. The school for foremen consisted of one- to four-semester courses depending on the study focus. The maximum time was spent by students of the engineering-technical department, and the minimum time by students of the sporadically opened vocational milling school. A high number of lessons was typical – 49 lessons a week, which, in the case of the engineering-technical department, included not only general and relatively widely applicable subjects (German, geography, mathematics, *Naturlehre*, trade documents, accounting and drawing) but also technical-theoretical subjects (machine drawing,

³³ See: ZAO, f. ZŠR, cart. no. 514b, sign. 27, the curriculum for the individual parts of the school for the school year 1875/1876.

the study of machines, the study of projection) and practical lessons in workshops (this took up approximately 1/4 of the lesson time).³⁴ It should be added that another important part of the education process at both highest levels of the industrial school in Bielsko was regularly organized field trips, during which theoretical knowledge and real practice were interconnected. Led by their teachers the students visited local and regional as well as more remote companies to get to know the current trends in technology and work organization as well as methods for the processing of various raw materials, and to become more familiar with the materials used and innovations of all kinds.³⁵ There is no doubt that the classes taught at the state industrial school in Bielsko were of high quality. Like at other schools of this type in Cisleithania, erudite figures, whose authority went far beyond the horizon of the school, could be found teaching here. The reason was that quite a few teachers were very active in professional and school organizations and in various expert committees, ranking among recognized experts with abundant publications and advisory and expert activities (Julius Zipser, Emil Joch and others).

The students and graduates of the industrial school in Bielsko

Although the need for industrial schools was obvious and emphasized by contemporaries, at the beginning the number of students did not reflect this need. The oldest schools, opened around the mid-1870s, received little interest in studies in the early years. The institution in Bielsko was no exception, as signalled by the enrolment in autumn 1874 when only 37 students enrolled at the school.³⁶ In the following years a maximum of around 50 students studied at the school. This signalled that the industrial school's offering was failing to correspond with local needs, not only in its form of studies, but also in its educational content.³⁷ Change was brought about only by the above-mentioned reorganization of 1880–1882. The modification of the organization and the widening of the study options increased the attractiveness of the school, which led to an increased number of students, mostly comprising the students of evening and Sunday courses, i.e., professionally already active persons who were increasing their qualifications at the school. This can be documented for the school years 1881/1882 and 1909/1910: in the former case the total number of students was 373 (53 of them studying at the higher industrial school, 11 at the school for foremen, 68 in specialized courses for masters/journeymen/foremen, 146 at the industrial *Fortbildungsschule* and 95 in the commercial department), while in the latter case as many as 800 students were attending the school (187 at the higher industrial school, 115 at the school for foremen, 245 in specialized courses, 125 at the trade *Fortbildungsschule* and 128 at the industrial *Fortbildungsschule*).³⁸ Although the school in Bielsko did not reach the size of the largest schools in Vienna, Prague

34 Jahres-Bericht (1889/90), 39–44.

35 Jahres-Bericht (1889/90), 5–6. Jahresbericht (1899/1900), 11–13. Jahres-Bericht (1909/1910), 16–17. For more details about field trips, see: KADLEC, V zájmu vlasti, 62–68.

36 For comparison: in the same period 39 students enrolled in the lowest years of the industrial school in Brno while 52 enrolled at the school in Chernivtsi. Jahresbericht (1874), 168.

37 Statistischer Bericht (1880, 1881), 410.

38 Jahres-Bericht (1881–82), 6. Jahres-Bericht (1909/1910), 22.

or Brno, it ranked among the institutions with the higher numbers of students within Cisleithania.³⁹

The state industrial school in Bielsko served as a supra-regional educational centre, which is documented in data related to the territorial origin of its students.⁴⁰ According to this data, the school mainly served the population of the respective region, the Silesians and the population of the neighbouring north-Moravian and Galician regions. Generally it can be said that both parts with the daily form of study (the higher industrial school and the school for foremen) had a larger action radius. For the most part their students came (in some years up to 3/4 of them) from various Silesian regions and only partly from the school's locality. The rest came from the neighbouring Galicia (only a minority of them were directly from Biąta) or, alternatively, from municipalities in northern Moravia, Bohemia, Hungary and, though only exceptionally, from other parts of the Habsburg Monarchy or from abroad. The territory from which the students of evening and Sunday courses, i.e., various specialized courses, the industrial and trade *Fortbildungsschule*, came to the school was significantly smaller. More than a half of them came directly from Bielsko or Biąta, the rest coming mainly from accessible places in Silesia (the Cieszyn, Frydek and Fryštát regions) and south-west Galicia (e.g. Kenty, Kraków, Oświęcim, Chrzanów). In other words, the school in Bielsko created a reservoir of qualified workers not only for the surrounding Silesian, but also for the Galician regions, thus contributing, on the one hand, to the advancement of industrialization in both lands and, on the other, to the ongoing social transformation.

The territorial origin of the students even significantly affected other characteristics such as ethnicity and religion, even though in both cases the composition of the students did not reflect the exact composition of the populations of the starting regions. According to the data from the annual reports, the school desks of the industrial school in Bielsko were dominated by students originating from a German-speaking milieu, who regularly formed more than 80 % of all students. As the statistical statement for the school year 1913/1914 shows, the dominance of children from these families was higher in the case of the daily form of study than in the case of evening/Sunday courses.⁴¹ Besides the differences in territorial origin, what contributed to this were the different social characteristics of the students of both primary parts of the school (see below). The remainder of the students was formed mainly of Polish-speaking children from the municipalities of the Silesian and Galician region of recruitment. Only sporadically was the ethnicity of the students different from German or Polish; and then, in most cases, they were children from Czech-speaking families. It must be added

39 Oesterreichische Statistik (1889/90), 64–69. Österreichische Statistik (1899/1900), XVII, 102–103. Österreichische Statistik (1909/1910), 164–165.

40 If not stated otherwise, the following characteristic is based on data printed in the annual reports of the school for the school years 1881/1882, 1889/1890, 1899/1900 and 1909/1910. We have the most comprehensive information about the composition of students of the daily form of study, mainly for the students attending the higher industrial school.

41 At the end of the school year 1913/1914 a total of 757 students were registered at the industrial school in Bielsko. Of the 352 students attending the parts of the school with all-day classes, children originating from the German-speaking milieu formed 92 % (323 persons). Of the 405 students attending evening/Sunday courses within the school, students from the German-speaking milieu constituted 86 % (350 persons). The remaining part was formed mainly of children from Polish-speaking families (7 % and 13 % respectively), together with individuals speaking other languages (mainly the descendants of Czech parents). ZAO, f. Zemská vláda slezská v Opavě [Silesian Provincial Government in Opava] (hereinafter ZVS), inventory number (hereinafter inv. no.) 1965, cart. no. 3691, sign. V/50/K-8, The statistical statement of students for the school year 1913/1914.

that the ethnically varied area of recruitment for the students in Bielsko indicated that a part of the students could rightly be expected to be bilingual (polyglossia). Those represented over-proportionately at the industrial school in Bielsko were Protestants and Jews, numerous in the local population and together forming about a half of all students. The different social context, professional aspirations and prestige caused that while Protestants and Catholics were spread out across all parts of the school relatively equally, the Jews were concentrated at the higher industrial school, at the school for foremen and in the trade department.⁴²

The social origins of the students of the higher industrial school and the school for foremen indicate that these schools were intended mainly for self-reproduction in the industrial and craft production of active people, as the majority of the students was recruited from the families of industrialists and sole traders or, alternatively, from qualified workers and mid-level factory staff. From other groups, those large in numbers included individuals originally from farming and merchant families, which shows the tendency to use studies with this kind of focus in connection with the ongoing socioeconomic transformation towards an intergenerational professional reorientation and horizontal social mobility. To a smaller extent than at the *Gymnasien* and *Realschulen* of the time, descendants from intelligentsia families were represented. According to incomplete data this was apparently mainly the case of children from the lower categories of the intelligentsia (lower office workers, teachers). What was most likely reflected here was the higher prestige of secondary schools focusing on general education, the different ideas about the future employment of the descendants of members of the intelligentsia in contrast to other parts of the population, and a greater adoration for humanities. In the case of the evening/Sunday courses students, we have access to data about their professional orientation, which corresponded not only with the educational content of the respective courses but also with the socio-professional characteristic of Bielsko and its vicinity. For this reason, the student composition of these courses was dominated by four professional groups (crafts): construction, engineering-technical, trade, clothing and textiles.⁴³

We know little of the previous education of the students of state industrial schools, the school in Bielsko included. In its case we have access to certain data merely for the highest educational level – the higher industrial school. The characteristic of its students reflected the relatively high demands for acceptance: an emphasis on a quality general educational basis and drawing skills. In the 1880s, roughly a half of the students was constituted by the graduates of the four years of *Realschulen*, probably especially those whose professional ambitions were not directed towards university education. Until the First World War, the four-year so-called lower *Realschulen* represented institutions from which an important, albeit gradually slightly decreasing (to approximately 40 %), part of the students of the higher industrial school was recruited. Throughout the years,

42 The statistics which are available regarding the composition of the students do not provide information about the language (ethnic) identity of specific students. It is therefore impossible to characterize for example students of a Jewish origin from the language aspect in more detail, and we can only presume that a higher number of bilingual or even multilingual persons would be found among them.

43 The aforementioned groups formed the dominant part of the students even before the outbreak of the First World War. In the school year 1913/1914, 64 students could be categorized into construction professions (crafts), 163 into engineering-technical professions, 78 into clothing and textile professions and 93 into trade professions. Only seven students were doing or preparing for a different profession at the time. See: ZAO, f. ZVS, inv. no. 1965, cart. no. 3691, sign. V/50/K-8, The statistical statement of students for the school year 1913/1914.

there was a considerable decrease in students who had completed all four years at any of the *Gymnasien*: in the early 1880s their share was around 35 %, while in the pre-war school years it was only about 7 %. The reason was that the *Bürgerschule*, which was reformed in 1883 and whose students already made up 53 % of those attending the higher industrial school before the First World War, was enforcing itself ever more as the most suitable preparation for studies. It should probably not come as a surprise that the largest part of the students of the school in Bielsko had previously studied in Silesia, mainly in the local educational centres (Bielsko, Cieszyn, Opava) or, alternatively, in municipalities not far from the Silesian border (Moravian Ostrava, Místek, etc.).

With the establishment of the industrial school in 1874, and mainly after its reorganization into the so-called state industrial school (*Staatsgewerbeschule*) in the early 1880s, Bielsko took its place among the centres of industrial education in the Cisleithanian part of the monarchy. It became one of the pillars of the developing infrastructure of professional education, which, under the supervision of the state, began to be formed from the early 1870s in an attempt to not only preserve the competitive level of industrial production but also to help the traditional forms of craft production and to maintain social stability. Through its engagement in the educational sphere the until then not very active Austrian state tried to face the challenges which had arisen due to the ongoing complicated socioeconomic transformations and the liberalization of economic activities. The decades following the establishment of the first industrial schools proved the legitimacy of industrial education regulated by the state in the form of multifunctional industrial schools, which served on a supra-regional scale to produce a qualified workforce for the industrializing economy. The evidence of the functionality as well as a certain timelessness of such schools is, among other things, that they also operated (albeit with some modifications) in the successor countries in the inter-war period.

The importance of the industrial school in Bielsko is underlined by three fundamental factors, which all influenced the decision to establish a school in this very place: the tradition of craft and industrial production in the town and its vicinity, the relative proximity to the developing Ostrava-Karviná industrial region and its placement on the border of Silesia and Galicia. In accordance with the intention of the establisher, the professional qualifications and knowledge crossed not only the borders of the region but also the land borders, which is documented in the student composition of the school in Bielsko.

The industrial school in Bielsko can be perceived as an umbrella educational institution within which various education levels, forms of study and fields of study were included. Their offerings followed from the local needs and demand. Unlike most other schools of the same type, the industrial school in Bielsko lacked a department where the workforce for the construction industry could be educated. Thus, one of the two main parts of the school, besides the usual engineering-technical department, came to be a chemical-technical department (where dyeing and other subjects were taught) and a weaving school, which corresponded to the socio-professional character of the population in the student recruitment area. In accordance with existing demand, these were complemented by irregularly opened evening and Sunday courses and by industrial *Fortbildungsschulen* for the education of industrial and merchant youth.

In the late nineteenth and early twentieth centuries, the importance of the industrial school in Bielsko did not follow "merely" from the fact that it considerably influenced

the size and quality of the qualified workforce for industrial production in Silesia, north-east Moravia and south-west Galicia; the extracurricular activity of its teachers together with the role of the school as a training centre for Silesian vocational school teachers was also very important. Thanks to this school Bielsko had, in the last quarter of the nineteenth century, become a true centre of education for industrial production in the broadest sense of the word. At the same time the above-mentioned constitutes the main reasons why the issue of industrial education, including the establishment of centres of vocational education, should receive greater reflection from historians.

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