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## The History of Education

### The Development of Vocational-Technical Education in the Ukrainian Governorates of the Russian Empire in the Late 18th and Early 20th Centuries. Part 1

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#### Abstract

This paper addresses the evolution of vocational-technical education in Ukrainian lands within the Russian Empire. Chronologically, the study covers the period between the late 18th and early 20th centuries. This part of the work is primarily focused on the making and development of particular vocational-technical institutions in the region under examination as well as the specialized and vocational-technical education offered by regular educational institutions in the period between the late 18th and the last quarter of the 19th centuries.

During that period, Ukraine was mainly an agrarian region, so relatively little attention was paid there back then to the training of industrial workers. At the same time, the region witnessed brisk development in its shipbuilding and seaborne trade sectors, which would result in the emergence of the region's first vocational educational institutions – Naval Architecture School and Merchant Shipping School in the city of Kherson. In the first half of the 19th century, the city of Chernigov became home to a trade school and industrial arts instruction began to be implemented in educational institutions of different types in the region. In addition, there emerged schools of horticulture, winemaking, arable farming, apiculture, etc. Despite a number of reforms in the education system, the region still had no system of vocational-technical training in place in the mid-1860s. Of particular note is the role of the Russian Technical Society, which was one of the key initiators of the organization of vocational-technical education in the Russian Empire as a whole and in the Ukrainian lands in particular. However, there were fewer vocational-technical

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educational institutions in Ukrainian governorates back then than in industrially developed Russian governorates.

**Keywords:** Ukraine, Russian Empire, education, education policy, education reform, economic development, child labor, vocational education, Russian Technical Society, sustainable development in education, education policy, education reform.

### **1. Introduction**

The democratic processes taking place today in Ukrainian society – democratization, reforms in education, and scientific development – are based on the national and historical achievements of the Ukrainian people. The latest progressive trends in the development of Ukrainian society have deep historical roots. A significant portion of the achievements of Ukraine’s education system have stemmed from the best practices of its educational institutions of the late 18th and early 20th centuries, including in the areas of organization of the educational process, pedagogical workforce staffing and management, provision of students with appropriate learning aids, and creation of appropriate conditions conducive to effective educational work. The findings of an analysis of a wide range of works by prerevolutionary scholars and pedagogue-practitioners indicate that the development of the system of vocational education was one of the primary concerns for the region’s authorities in the past.

A key focus of the nation’s education authorities in the 21st century is on enhancing vocational training and having it based on a substantial base of general-education knowledge. The development of technology and production is hardly possible today without a skilled workforce trained within the vocational-technical education sector. Unfortunately, little account has been taken of the many years’ experience in implementing workforce training in the Ukrainian governorates of the Russian Empire. One of the key reasons behind this is that during the Soviet period most pedagogue-practitioners had a nihilistically dismissive attitude toward the historical-pedagogical achievements of the pre-Soviet period. With this in mind, the present work is intended to analyze and provide a unique insight into the process of development of vocational-technical education in Ukraine in the late 18th and early 20th centuries.

### **2. Materials and methods**

In writing this paper, use was made of relevant research by pedagogical scholars and historians. More specifically, extensive use was made of relevant works by contemporaries and firsthand participants in the transformations to vocational-technical education that were undertaken between the second half of the 19th and early 20th centuries. Of particular note are the materials published in the periodical *Zapiski Russkogo Tekhnicheskogo Obshchestva* (Russian: “Transactions of the Russian Technical Society”) (ZRTO) and the statutory enactments from the first and second parts of ‘The Complete Collection of Laws of the Russian Empire’ (PSZRI-1; PSZRI-2).

Methodologically, use was made of sets of general and historical research methods. The use of induction and deduction helped identify and amass relevant empirical information, which was employed to substantiate the paper’s key tenets. The use of analysis and synthesis helped conduct an objective assessment of the various events and processes that had an effect on the making and development of the vocational-technical education in the Russian Empire as a whole and in Ukrainian governorates in particular. The use of the comparative-historical method helped determine the dynamics and special nature of the development of educational institutions offering vocational-technical training across the empire. It is the use of this method that resulted in the conclusion that in the second half of the 19th century there were fewer vocational-technical educational institutions in Ukrainian governorates than in industrially developed Russian governorates.

### **3. Discussion**

The first research on vocational training emerged between the late 19th and early 20th centuries. Most of the works were focused on issues related to training a workforce for a particular sector of the economy. These included publications summarizing the best practices from vocational educational institutions. Schematic surveys of materials on the history of vocational-technical education are provided in the works by V. Akimov (Akimov, 1916), Ye. Andreyev (Andreyev, 1872; Andreyev, 1892), I. Anopov (Anopov, 1889; Anopov, 1895), S. Vladimirskiy (Vladimirskiy, 1896), N. Korol’kov (Korol’kov, 1897; Korol’kov, 1912), I. Maksin (Maksin, 1909), A. Nebolsin (Nebolsin, 1883; Nebolsin, 1903; Nebolsin, 1912), and other public figures,

pedagogues, and scholars (Goshkevich, 1908; Yershov, 1904; Zavadskiy, 1908; Lavrinovich, 1898; Lavrinovich, 1902; Lyskovskiy, 1897; Lyskovskiy, 1906; Chuprov, 1899). Issues related to vocational training were periodically discussed in the journal *Tekhnicheskoye Obrazovaniye* ("Technical Education"; later to become *Tekhnicheskoye i Kommercheskoye Obrazovaniye* ("Technical and Commercial Education")). This body of literature developed the ideas of the superiority of sustained manpower training and the need to expand the country's network of vocational educational institutions.

What makes it particularly valuable is the extensive factual and statistical material. That said, the works by I. Anopov and A. Nebolsin provide data covering the second half of the 19th century, whereas the significant increase in the number of technical schools in the Russian Empire took place between the late 19th and early 20th centuries. These authors promoted the idea of expanding the network of vocational-technical educational institutions in Russia in conjunction with the brisk growth in industrial production and the corresponding need for a skilled workforce.

A special approach to secondary vocational education was taken by the prominent Russian pedagogical scholars K. Ushinsky, D. Mendelejev, and P. Kapterev (Ushinskiy, 1974; Mendelejev, 1901; Kapterev, 1914), who advocated for replacing general education with vocational and suggested that the latter must be based on the former. In addition, these scholars called for developing the country's network of vocational schools as fast and widely as possible due to the need to avoid the dependence of the Russian economy on foreign specialists.

The above studies are limited to investigating the training of workers mainly for the industrial central regions of the Russian Empire. Ukraine (by that time, the region under examination was normally referred to as one of the following: New Russia, Southwest Russia, South Russia, and Little Russia) is mentioned in them rarely, although the region's vocational educational institutions had accumulated a certain amount of experience by that time already.

During the Soviet period, the study of the issue of vocational-technical education was typically associated with the study of the working class in the Soviet Union and in the Ukrainian SSR as its constituent. Virtually all the works released in the interwar period are devoted to the history of the making of the Soviet system of vocational-technical education. Everything that had taken place in the country in the area of the development of vocational-technical education prior to 1917 was seen as something negative and reactionary. Most of the works on the subject released during that time were of a publicistic nature, with the vocational education of the period under review serving in them as a backdrop against which to highlight the advantages of the Soviet vocational education system. The absence of positive assessments of the government's work in the area of vocational education was a distinctive characteristic of Soviet historical-pedagogical science.

The postwar stage of the Soviet historiography on the subject was characterized by more meaning and quality from a scholarly standpoint. Of particular note here are the works by N. Barbashev (Barbashev, 1959), A. Veselov (Veselov, 1955b; Veselov, 1959; Veselov, 1961), N. Kuz'min (Kuz'min, 1971), and M. Puzanov and G. Tereshchenko (Puzanov, Tereshchenko, 1980). The first three authors focused on the national context, and the duo addressed the history of vocational-technical education in Ukraine specifically. This body of literature helps identify some of the key distinctive characteristics of the development of vocational-technical education in different regions of the country and gain insight into the way the government implemented its policy on workforce training.

Worthy of separate mention are the works by Ukrainian researcher T. Demchenko (Demchenko, 1982; Demchenko, 1983), focused on the cultural and educational activity of the local divisions of the Russian Technical Society in Ukraine. The scholar's dissertation-based work provides an insight into the activity of such entities with regard to the creation of educational institutions of different types, most importantly those of a vocational-technical nature, and a glimpse into the history of the school sector run by the Ukrainian divisions of the Russian Technical Society. According to the researcher, "the creation of technical and general-education schools was one of the key areas of activity for the divisions of the Russian Technical Society", which "were interested in a variety of issues related to technical education and eagerly took part in the various forms of examining the state of the technical and trade educational institutions on location" (Demchenko, 1983: 93-115, 116-147).

The contemporary period of the historiography on the making and development of vocational-technical education in the pre-Soviet time, which begins in 1991, is concerned with social processes taking place in post-Soviet society. It is characterized by a radical overhaul of

research paradigms – there was now more freedom of judgment, researchers enjoyed a wider access to documentary materials, and the government’s policy on vocational-technical education was more objective.

A major upsurge of interest in the history of the development of vocational-technical education in the Russian Empire, at both the national and regional levels, has been witnessed among historians and pedagogues in the Russian Federation. Over the last few decades, a number of groundbreaking works, mainly dissertation-based, have been released, including those by O. Kir'yanova (Kir'yanova, 1996), T. Abdulmutalinova (Abdulmutalinova, 1998), Yu. Borduchenko (Borduchenko, 1998), V. Sinyushin (Sinyushin, 2003), S. Zyablova (Zyablova, 2004), A. Yermilin (Yermilin, 2004), T. Dubrovskaya (Dubrovskaya, 2004), Ye. Deyev (Deyev, 2007), and I. Belyayeva (Belyayeva, 2012). This body of literature is crucial to gaining an understanding of general trends in the development of vocational-technical education in the Russian Empire, government policy in respect of this sector, and the pedagogical ideas of various scholars and public figures interested in technical education.

Over the last few decades, shifts in the study of the subject under examination have taken place in Ukrainian historical-pedagogical science as well. Of particular note are the works by N. Slyusarenko (Slyusarenko, 2003), V. Dobrovol's'ka (Dobrovol's'ka, 2006), O. Chorny (Chorny, 2007), S. Sytnyakivs'ka (Sytnyakivs'ka, 2009a; Sytnyakivs'ka, 2009b; Sytnyakivs'ka, 2010), Ya. Nahrybel'nyy (Nahrybel'nyy, 2012), M. Honchar (Honchar, 2015), T. Moiseeva (Moiseeva, 2020), I. Petrenko and I. Vynnychenko (Petrenko, Vynnychenko, 2022), A. Lebid, V. Korol, and others (Korol, 2015; Korol, Korol, 2017; Degtyarev et al., 2021; Lebid, Shevchenko, 2021; Lebid, 2022; Lebid, Lobko, 2022), which provide insight into various aspects of the development of vocational-technical education in the Russian Empire as a whole and in Ukrainian governorates in particular.

On balance, despite the tangible upswing in the activity of modern-day historians and pedagogues researching the history of vocational-technical education, both in the Ukrainian lands and across the Russian Empire, there are still gaps that need to be filled in this area of research.

#### **4. Results**

The late 18th century witnessed the completion of the process of formation of the ethnic Ukrainian lands of Dnieper Ukraine, which incorporated the vast territories of Rightbank Ukraine, Leftbank Ukraine, and Southern Ukraine. The majority of the Ukrainian population was made up of rural residents. In terms of social composition, most of the peasants in Rightbank Ukraine were serfs; in Leftbank Ukraine, one third of the peasants were Cossacks (equated to state peasants) living in small villages; there was almost no serfdom in Southern Ukraine, which was dominated by resettlers, free peasants, and ex-soldiers.

The region was mainly a subsistence economy. By implanting serfdom in all the annexed lands, the government undermined the potential for employing new productive forms of economic management, entrenching outmoded and low-margin ones. This social-economic state of affairs in Dnieper Ukraine was not very conducive to the development of education there, let alone vocational-technical education. At the turn of the century, the operation of the country’s entire education system was based on the Statute of 1786, which mainly was focused on educating the urban population. The adoption of this statute had an effect on the education system in Ukraine as well, leading to the opening of new schools in a number of cities. There were opened minor (in uyezds) and major (in gubernia cities) public schools. The minor (four-grade) schools had a 6-year program of study and the major ones (two-grade) a 4-year one. In early 1801, the Ukrainian governorates of the Russian Empire had 8 major and 17 minor schools, which, of course, would not be enough to reach a large number of students with education (Luzan, Vasyuk, 2010: 78).

At the same time, the region became home to new cities in the late 18th century – Mariupol (1779), Nikolayev (1784), Kherson (1778), and Odessa (1794). These cities were focused on the new sectors of the Ukrainian economy – shipbuilding and seaborne trade, which were in need of a sizable skilled workforce. As a consequence, the region’s first vocational schools were established – Naval Architecture School (1798) and Merchant Shipping School (1834) in the city of Kherson.

In 1802, the Russian government established the Ministry of Public Education, which would have purview of the Main School Directorate, the Academy of Sciences, and the country’s universities and schools (exclusive of educational institutions run by other government entities). In 1804, the Russian government adopted the *Statute of Universities* and the *Statute of Educational Institutions Subordinate to Universities*, which would lay the foundation for the

country's system of secular education, composed of four types of educational institutions (parish schools, uyezd schools, gymnasiums, and universities) (Istoriya pedahohiky, 1973: 148-149). With that said, vocational-technical education was left out of account.

Despite the disregard for vocational-technical training, it is in the Ukrainian lands that as early as 1803 the Russian Empire's first trade school was established in the city of Chernigov, which was done on the initiative of Little Russia Governor-General Prince A. Kurakin (PSZRI-1. T. 20VII. №20808: 686). Officially opened on May 1, 1804, the school was to cater to the lower strata of society. In a position to accommodate 336 students, on the day of the opening it had an enrollment of 35 students, with 9 of these representing the Cossacks, 25 – urban commoners, and 1 – the merchantry. In 1811, the school had 96 students. It enrolled teenagers aged 12 through 15, with those older than 15 being admitted to Joinery class only. The project initiated by Prince A. Kurakin envisaged the teaching of 14 crafts. However, initially the curriculum only included joinery, metalworking, silversmithing, shoemaking, turnery, and woodcarving. Each craft was taught by a master craftsman. Most of the master craftsmen were paid an annual salary of 350 rubles. The only general-education subject taught at the trade school was arithmetic. On graduation, each student would receive a sum of money equal to half of what the items they made over the course of the last three years were worth (Siropolko, 2001: 361). The trade school operated until 1832, when on June 14 a decree came out closing it and opening a drawing school in its place (PSZRI-2. T. VII. №5457: 397).

In 1828, the government of Nicholas I launched a counter-reform of the education system, with its primary objective being formulated as “to prepare a person for performing their social duties”. It was enshrined in the *Statute of Gymnasiums and Schools Subordinate to Universities*. The reactionary Statute of 1828 legitimized division into classes, monarchism, and religiousness in educational institutions. The school types in the districts were left in place, but continuity between them was undermined, with each type catering to a particular social class now (Luzan, Vasyuk, 2010: 83-84; Istoriya pedahohiky, 1973: 153-154).

However, the Statute of 1828 allowed teaching certain crafts in the specialized second grade of parish schools. More specifically, its Article 58 stated that, in addition to core general-education subjects, it would also be possible to teach, with permission from the Minister of Public Education, some special courses in the crafts and sciences a command of which was believed to be most conducive to success in commerce and industry (PSZRI-2. T. III. №2502: 1104). Article 59 listed the potential additional courses as follows: 1) General Concepts on National Legislation and Legal Procedures (relating mainly to commerce); 2) Fundamentals of Commercial Sciences and Accounting; 3) Fundamentals of Mechanics and Technology. Drawing (as customized for the crafts and vocational skills). Fundamentals of Architecture (focused on the skills of a builder); 4) Agriculture and Horticulture. Articles 60 through 66 established the procedures for introducing and teaching the above additional courses (PSZRI-2. T. III. №2502: 1104-1105). Thus, the third area had an immediate relation to vocational-technical training.

The primary reason behind the increase in attention to vocational training for uyezd school graduates was the need for a well-trained workforce who could be employed at factories and plants (Kuz'min, 1971: 11). This was associated with the brisk economic development in the Russian Empire, including in Ukrainian governorates. The first quarter of the 19th century witnessed the rapid development of a free market economy there.

As a consequence, the first vocational schools were opened in the early 19th century in Dnieper Ukraine – the trade school in Chernigov, the merchant shipping school in Kherson, the schools of horticulture in Poltava, Yekaterinoslav, and a few other areas, the school of winemaking in Crimea (Magarach), the school of arable farming in Kharkov, the school of apiculture in the village of Pal'chiki (Konotop Uyezd, Chernigov Governorate), and others. The emergence of these educational institutions was associated with the needs arising in conjunction with economic development. However, these schools were still not enough. Oftentimes, training was conducted based on 18th-century traditions, i.e. by way of the apprenticeship system, which required one to complete a long work-based schooling journey from being an apprentice to being a journeyman and, lastly, to being a master.

The industrial revolution of the 1830s would present the economy of Dnieper Ukraine with even a greater need for a well-trained workforce than before. This was associated with the wide implementation of cutting-edge technology and machinery in production for the purpose of boosting the competitiveness of Russian-made goods in the international market (Reyent, Maliy, 2009: 59).

As a consequence, in 1839, under pressure from the new bourgeoisie and to help enhance vocational-technical training, the government issued the *Regulation on Real Classes at Educational Institutions Under the Purview of the Ministry of Public Education*. This document captured statutorily the status of real classes and courses, which had evolved from the time this type of training emerged in the early 19th century. It stated that, in essence, real classes were institutions intended for temporary instruction in technical sciences. Therefore, the subjects taught in them were not part of a school's core curriculum. Such specialized courses were typically attended from early October to late March and lasted 2 years (Kuz'min, 1971: 12).

At the same time, despite the fact that the overall network of educational institutions in Ukraine was gradually expanding at the time, the number of vocational-technical schools there remained virtually unchanged (Table 1).

**Table 1.** Dynamics of the Numbers of Educational Institutions of Different Types in Ukraine in the Second Quarter of the 19th Century (Dani, 1973: 155)

Year	Parochial schools	Uyezd schools	Vocational-technical schools
1830	718	416	1 (Chernigov Trade School (1804–1832))
1850	1062	433	1 (Kherson Nautical School (since 1834))

It must be acknowledged that, despite imperfections in the way they were organized, the creation of additional classes and courses at gymnasiums and uyezd schools was a positive phenomenon. In a country lacking vocational-technical educational institutions, such additional classes and courses were helping fill the shortage of well-trained workers who could be employed in different sectors of the economy (Kuz'min, 1971: 12-13).

The organization of the educational process in such institutions had a number of imperfections. The biggest concern was poor practical training for graduates of real classes and additional courses. General-education schools lacked the capability to provide this kind of training. Things were especially troubling with practical training for students in additional courses in shipbuilding, seamanship, technology, and construction. Additional courses and classes at gymnasiums and uyezd schools could not substitute for specialized educational institutions.

Up until the second half of the 19th century, the government's solicitude for vocational-technical education was limited to encouraging the efforts of private individuals and organizations in creating and maintaining specialized secondary and lower educational institutions. The government would normally set up additional courses and classes or specialized educational institutions only if a city's local commune or private individuals pledged to fund them. Only in rare cases would vocational-technical educational institutions receive subsidies from the government, as was the case in the shipbuilding and nautical sectors.

As a result of the bourgeois reforms undertaken by the government, the first and most important of which was the peasant reform of 1861, Dnieper Ukraine embarked on a path of rapid economic growth. Market relations in agriculture intensified the need for cutting-edge equipment and machinery. A rapidly growing network was that of plants manufacturing agricultural implements. There also was substantial progress in the development of heavy industry. The fulcrum of the region's capitalist industry was coalmining, as coal was the main type of fuel for steam engines, which were being widely implemented at industrial facilities at the time. Another sector that developed rapidly in the second half of the 19th century was the metallurgical industry, with Yekaterinoslav and Kherson Governorates becoming home to a combined 17 metallurgical plants. In 1880, there were 197 mines in the Donbas region.

The brisk development of new industrial sectors in the region brought about the need for enhancing its transportation system. This would spur the development of its inland navigation fleet, navy, and merchant fleet. The biggest boom was in rail transportation. The development of the region's rail network resulted in the ports of Nikolayev and Odessa getting connected to the industrial (e.g., Lugansk, Bakhmut, and Yasinovataya) and agricultural areas of Kiev, Yekaterinoslav, Podolia, and Kharkov Governorates, which would result in a significant increase in trade between them. As a consequence, by the late 1870s Dnieper Ukraine witnessed an industrial revolution that ensured the transition from manual labor to machine labor and the implementation of steam engines and machines in production. The region's principal industrial areas specialized as follows: Rightbank Ukraine – processing and agricultural machinery manufacture; Leftbank

Ukraine – coalmining and metallurgy; Southern Ukraine – shipbuilding and seaborne trade.

The rapid development of industry in the region brought about a corresponding need for a skilled workforce – and, consequently, a pressing need for educational institutions capable of turning out well-trained workers and engineers.

In the mid-1860s, the government undertook reforms in education, which helped upgrade the country's education system – but it did not lead to the creation of a system of vocational-technical training there. (This situation would persist up until 1888.) Prior to that time, vocational-technical educational institutions were typically under the purview of different government entities there. But on May 8, 1864, the Committee of Ministers issued a regulation, *On the Procedure for Establishing Trade and Similar Technical Schools*, whereby it would be permitted to open trade and other technical schools only when such educational institutions could be maintained with funding from local authorities or with donations from private individuals (PSZRI-2. T. XXXIX. №40860: 408-409).

This decision would impede efforts to establish vocational-technical institutions. A good example here is the refusal of Odessa's local government to maintain Odessa Trade School. The school's charter was signed into law on October 26, 1862. However, as early as 1865, Odessa's local commune refused to open the school, limiting itself to setting up trade departments within certain parish schools in the city (PSZRI-2. T. XL. №42762: 328-329).

In the meantime, the natural need for a well-trained workforce kept growing. This is where the general public and several nationwide Russian societies stepped in. Of particular note is the work of the Russian Technical Society (known as the Russian Imperial Technical Society since 1874).

The history of the Russian Technical Society goes back to the late 1850s, when members of Russia's forward-thinking community of engineers and scholars familiar with the best practices of capitalist industrialization in Western European countries and aware of the new role now played by science in the development of industry made it their mission to put those best practices to use to help Russia overcome its technical-economic and cultural backwardness. The Society opened in 1866 on the initiative of Saint Petersburg scholars, engineers, and capitalist entrepreneurs (Karelin, 1985: 10).

The Society had a fairly extensive network of local divisions, with a presence in major industrial cities of Ukraine. In 1896, the Russian Technical Society had 23 divisions (Tekhnicheskkiye obshchestva, 1901: 122), of which the following were in Ukraine: Nikolayev (est. 1869), Kiev and Odessa (1871), Kharkov (1879), Yekaterinoslav (1892), and a few others. These divisions would play an important role in establishing vocational-technical educational institutions in the Ukrainian lands (Savchuk, Kushlakova, 2009: 132).

An important fact is that the Russian Technical Society was allowed to establish trade classes and schools at plants and factories and in “areas inhabited by factory workers and tradesmen”. Overall, the Society received permission to open two types of vocational-technical school:

1) specialized schools and classes (technical, trade, sketching, and technical drawing), intended to prepare students for work in various industries, with training shops available where necessary;

2) general-education schools offering programs of primary general and elementary technical education (Kuz'min, 1971: 16).

The Society's fit-out work in respect of such schools and courses commenced in 1869. Initially emerging as private educational institutions, schools and courses of the Russian Technical Society would, beginning in 1883, operate based on the *Charter for the Schools of the Russian Technical Society*, signed into law by the Minister of Public Education.

For instance, during the period the Society's Kiev division was in operation, the area became home to the following educational institutions: Smela Technical Classes, which in 1884–1917 turned out 450 specialists for the sugar industry; School for Construction and Rail Foremen, which in 1901–1915 turned out 380 specialists; Courses for Stokers, which in 1901–1908 provided a secondary technical education to 140 students focusing on steam boiler systems; School of Printing; Stonecutting Courses. Some of the leading members of the Society's Kiev division, who included professors of the St. Vladimir University of Kiev, took part in the creation of Kiev Polytechnic Institute (Pylypchuk, 2006: 14).

On May 15, 1868, the Permanent Commission for Technical Education was set up within the Russian Technical Society. It was the country's first institution focused on resolving issues related to the training of workers for the engineering sector. Concerned with determining the content,

methods, and organization of general-education and vocational-technical training and theoretical and on-the-job learning, the Commission would gather and analyze information related to the best practices of the development of vocational-technical education in the Russian Empire and other countries. Its work would produce regulations, curricula and learning programs, rules, and instructions for vocational-technical educational institutions. In 1869, the Russian Technical Society began to publish the periodical *Trudy Postoyannoy Komissii po Tekhnicheskomu Obrazovaniyu* ("Publications of the Permanent Commission for Technical Education"). In 1892, it launched *Tekhnicheskoye Obrazovaniye* ("Technical Education"), Russia's first specialized-pedagogical journal concerned with issues of vocational-technical education.

The Society, which combined members of the progressive bourgeois intelligentsia and industrialists, would play an important role in shaping the bourgeois-liberal concept on vocational-technical training for factory workers in the Russian Empire. This concept was grounded in the following principles: 1) organization of mandatory primary general-education training; 2) separation of general education from vocational-technical education; 3) organization of on-the-job training based on rational methodologies, with a focus on remediating the imperfections of individual apprenticeship; 4) combination of vocational-technical training with indoctrination in bourgeois morals; 5) shifting the costs of educating workers onto themselves; 6) statutory regulation of the labor and education of minor workers (Karelin, 1985: 12-13).

Of particular importance is the Society's role in staging the All-Russian Congresses of Persons Interested in Technical and Vocational Education – in Petersburg (1889–1890), Moscow (1894–1895), Odessa (1903), and Kiev (1917). The first such event was attended by instructors, industrialists, factory owners, and high-ranking government officials.

Issues discussed at the Congresses typically fell into the following categories:

- higher technical educational institutions;
- real and commercial educational institutions;
- agricultural educational institutions;
- educational institutions under the purview of the Ministry of Communication Lines;
- nautical classes;
- female general-education and vocational schools;
- manual labor in schools.

Issues discussed at the Congresses included the state of technical education in Russia; curricula and learning programs at technical educational institutions; educational institutions' participation in the development of industry; manual labor in primary and lower technical educational institutions; sketching and technical drawing in technical education; requirements for instructors of specialized crafts and technical subjects; auxiliary activities aimed at enhancing the educational process; school hygiene; requirements for textbooks and reference books for the training of engineers, technicians, foremen and their assistants, etc.; ways of assessing the knowledge of students at technical educational institutions (ZRTO. 1890. №5: 28-53).

Most of these issues were discussed at the second and third Congresses (Krichko, 1991: 61). Their agenda included not only discussing issues in technical education but establishing requirements concerning technical education. With each event, the number of Congress participants increased, which reflected the public's growing interest in issues concerning technical and vocational education (Veselov, 1955a: 52).

Most Congress participants were perfectly aware of the need for statutory regulation of the status of minor workers. A draft law on minors' labor was even developed. The fitting out of schools for minor workers and courses for adults required funding, so the decision was made to get factory and mill owners to pay a sum equal to 2% of the wages they paid. Underage workers could be admitted to work without attending school provided they had completed primary school. Otherwise, one would have to attend school 2 hours a day (ZRTO. 1874. №6: 89-90; ZRTO. 1875. №1: 34-50). These ideas found a reflection in a report by A. Nebolsin, entitled 'School Education of Minor Workers at Factories and Plants' and presented at the first Congress, in which the scholar suggested introducing a tax to be paid by factory owners to help maintain schools for minor workers regardless of whether or not they had such workers. Factory owners who organized such a school at their facility would be exempted from paying the above tax. It would be mandatory for minor workers to attend such a school (ZRTO. 1890. №4: 13-14).

All three events were characterized by the discussion of similar issues, including looking for effective ways to develop vocational and technical education, developing general primary education

for the lower strata of the population, promoting out-of-school forms of education among workers and tradespeople, and reducing working time (Ocherki istorii shkoly, 1991: 125). However, many of the solutions proposed at the Congresses would eventually not be implemented.

Despite the Congresses' relatively low effectiveness, they did reflect the growing interest in the development of vocational-technical education in the country and facilitated professional exchange among teachers. Hence, the important role of the Russian Technical Society in promoting vocational-technical education across the Russian Empire as a whole and in the Ukrainian lands in particular is unquestionable.

## 5. Conclusion

The period from the late 18th century to the 1880s can be regarded as a presystemic one in the development of vocational-technical (often referred to as industrial) education in the Russian Empire. This was associated with the fact that the government would implement such training only based on the current needs of particular sectors of the economy.

Since Ukraine was mainly an agrarian society back then, little attention was paid to training for industrial workers there. On the other hand, in the final quarter of the 18th century, the Russian Empire absorbed the vast territories of Southern Ukraine, where shipbuilding and seaborne trade were major sectors of the economy. This would result in the emergence of the region's first vocational educational institutions – Naval Architecture School and Merchant Shipping School in the city of Kherson.

The first half of the 19th century was marked by the brisk development of practical arts, which entailed the need for a large number of craftspeople, with the practice of training tradespeople by way of apprenticeship being no longer viable. As a consequence, there emerged a trade school in the city of Chernigov and industrial arts instruction began to be implemented in educational institutions of different types in the region. The development of agriculture, too, required more skilled workers. There emerged schools of horticulture in Poltava, Yekaterinoslav, and other cities, a school of winemaking in Crimea, a school of arable farming in Kharkov, a school of apiculture in Chernigov Governorate, etc. However, the increase in the number of vocational-technical educational institutions in the region was insignificant.

The reforms undertaken in the third quarter of the 19th century, the development of industrial sectors in the southern governorates, the upturn in rail construction activity, and the end of the industrial revolution only intensified the need for a well-trained workforce – and, consequently, a pressing need for educational institutions capable of turning out well-trained workers and engineers.

In the mid-1860s, the government undertook reforms in education, which helped upgrade the country's education system – but it did not lead to the creation of a system of vocational-technical training there. (This situation would persist up until 1888.) In the 1850s–1880s, vocational-technical education in Ukrainian governorates was characterized by the following two trends – (1) the primary focus being on the training of workers for trades, shipbuilding, and seamanship and (2) educational institutions operating based on individual charters with a narrowly specialized focus. However, there were fewer vocational-technical educational institutions in Ukrainian governorates back then than in industrially developed Russian governorates.

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