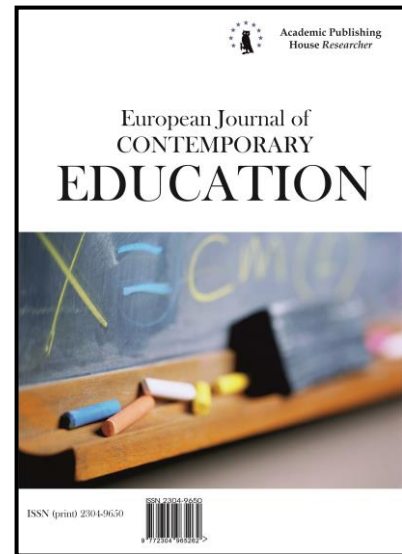




Copyright © 2019 by Academic Publishing
House Researcher s.r.o.
All rights reserved.
Published in the Slovak Republic
European Journal of Contemporary Education
E-ISSN 2305-6746
2019, 8(1): 215-221
DOI: 10.13187/ejced.2019.1.215
www.ejournal1.com

WARNING! Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



Apprenticeship in Secondary Vocational Schools during the Economic Modernization in late Imperial Russia. Part 2

Timur A. Magsumov ^{a, b, c, *}

^aInternational Network Center for Fundamental and Applied Research, Washington, USA

^bVolgograd State University, Volgograd, Russian Federation

^cNaberezhnye Chelny State Pedagogical University, Naberezhnye Chelny, Russian Federation

Abstract

In his study of the formation of apprenticeship system and analyzing its content, methods and forms in the Russian secondary vocational school described in the materials of the Kazan school district of the late XIX – early XX century, the author relies on the theory of Western modernization and positive bureaucracy, attracting regulatory and educational documentation, scientifically and publicly pedagogical journalism as well as ego documents.

Practical methods of knowledge application were planned in the pre-revolutionary schools in the logical-pedagogical relationship, but their implementation left much to be desired. In the organization of production practice, this was due to the lack of permanent bases and practical managers from the educational institutions, a certain attitude towards the trainee at enterprises as auxiliary personnel engaged in versatile non-system work, as it was openly declared by the advanced pedagogical press and even by the administrative and training personnel in schools.

The article also reveals positive aspects in the organization of practical training, which are still relevant today. These include the introduction of active learning methods, improved reporting documentation, payment for the students, preparing them for the future profession and management.

The rapid development of practical training was due to the need of a qualified young specialist who was prepared for independent production activity in the new conditions of accelerated modernization of the country's economy.

Keywords: Russian Empire, the history of education, training, practice, internship.

Introduction

We would like to present the final (i.e. second) part of our article on the formation and

* Corresponding author

E-mail addresses: nabonid1@yandex.ru (T.A. Magsumov)

serious transformation that the organization of practical training in secondary vocational schools of the Russian Empire underwent during the modernization of the country. The first part of the article (Magsumov, 2018) covered general issues of the organization of practical training of students and revealed its specificity in the oldest types of vocational schools in Russia, i.e. agricultural schools. In the second part of the article, it is our aim to show the way practical training took place in technical, commercial colleges as well as nautical and river transport schools in late-imperial Russia.

4.3. The organization of practical training in technical and commercial schools at the beginning of the 20th century

Along with agricultural schools, industrial schools were also characterized as having certain deficiencies in terms of industrial practical training. Of course, the students' practical work in the workshops and laboratories of the vocational schools they attended contributed to their more complete understanding of special subjects and complex technological processes in industries. However, achieving the goal of linking education with real life was hampered by the fact that schools did not always have the equipment that met such goal.

Industrial practice took a significant share in the program of the chemical-technical education of the Kazan Industrial College (KIC), which was mostly carried out in college chemical laboratories and technical-chemical workshops, and occasionally in factories around the city (NART. F. 121. Op. 1. D. 166. L. 2). In the first grade, nine hours per week were allocated for practical classes held in the locksmith's workshop. The students were to acquire skills in metal processing using various types of chisels, filing surfaces, scraping and manual grinding of planes, threading, riveting, soldering, tinning.

The second half of the grade was devoted to the study of methods of connecting pipes and ensuring their tightness, as well as servicing various equipment: pumps, presses, steam boilers and steam engines. In the second and third grade, students practiced in the chemical laboratory at the KIC. The main purpose of those classes was to master the students' skills of performing various types of analyzes. As the final part of the studies, the students had classes in the technical-chemical workshops. The third-grade students were to spend 8 hours in those workshops, whereas the fourth-grade ones were given 20 hours. Those classes were supposed to improve the students' understanding of the basics of chemical production and introduce them to real-life technological processes as well as to the machinery most frequently used in the chemical industry.

We have already mentioned that, just as it took place in agricultural education, rules were also developed for industrial schools students that regulated working in factories and industrial plants. Much more emphasis was placed on the prevention of accidents rather than on the aims and content of the practice. The first paragraphs of the rules covered disciplinary aspects and were similar to the "Instruction for the trainees of agricultural schools". There was a difference in the sixth paragraph of the rules, which forbade pupils to have conversations with workers, if that was not related to the technical side of production, and, apparently, was aimed at reducing the mutual influence of the students and workers (Litvin, 2016: 716; Nizamova, 2013: 165). The second part of the rules covered occupational safety requirements, prescribing all types of operations and work. A number of paragraphs were quite simple and seemed natural; their inclusion was partly explained by the fact that the students were adolescents prone to various pranks. For example, it was forbidden to open protective equipment of production machinery out of sheer curiosity, or stop operating machines. In addition to general technical requirements, the rules were specified for students of various specialties. Thus, there was a section dealing with work on buildings for construction-technical schools: students were forbidden to run through the scaffolding and along walls of buildings being erected, climb up the rafters and roofs if that was not required, as well as they were not allowed to stand on the edges of unfortified slopes during earthworks operations (NART. F. 121. Op. 1. D. 292. L. 1-2). The reason was quite understandable as all that could lead to damage to the equipment and industrial injuries. However, concerning the issue of students safety, the Ministry of Education (ME) was not so principled compared to providing the system of prohibitions and allocation of funds. Even in 1913, an application made by one of the trustees of educational districts for permission to insure trainees failed to receive the approval of the ministry, which eventually issued a mere decree concerning a strict and precise observance of all safety measures (Laurson, 1916: 806). The same trend can be also observed in the letter issued by the ME

in 1915 “On the introduction of protective goggles (the system of Prof. Donberg – T.M.) for the students of industrial schools” (Laurson, 1916: 989).

Recommendations for the implementation of safety measures in the industrial schools were stated much earlier than the rules on working at factories. This, it was stated in the ministerial exemplary programs that “rules are to be drawn up and posted concerning works in the laboratories (the schools’ chemical laboratories – T.M.), which are to include the rules for handling chemicals, utensils, devices and instruments” (Uchebnye plany, 1891: 57). In the KIC, such rules were drawn up, but it is rather difficult to find out whether such regulations were actually placed in the laboratories due to the partial representation of the room in the available photos and low resolution of the images. However, in one of the photos, a paper poster can be seen placed on the wall, and there were notebooks on the table (Grigoriev, 2006: 31-32). Having a neat copybook was taken into account when grading the student for the practice, while keeping notebooks during the experiments was ensured by providing a fairly large workplace for each student, as it can be seen from the photos of the chemical laboratory of the Saratov Technical College (SarTC) (Saratovskoe, 1903: 162-163).

In order to make the students fully familiar with the production being studied, the school provided them with a program of classes to study various types of production. Upon completion, the students were required to provide a report on their classes at the factory or plant, which was to reflect the results of observations, information from work managers collected on site, drafts and detailed drawings of particular parts of buildings, appliances and machines (NART. F. 121. Op. 1. D. 292. L. 1).

The specificity of the Votkinsk Secondary Mechanic-Technical College (VSMTC), originally established at the Votkinsk industrial plant, was a focus on this particular enterprise, which is why all the practice activities of its students were held exclusively there. The fourth-grade students were engaged in assembly works in mechanical workshops, making drawings, as well as studying particular industries in practice. They also monitored the way boilers and other machinery operated, took care of them, monitored the sequential progress of the production of individual parts of locomotives and agricultural tools in various workshops. An observation log was compiled that included a list of the last types of the student’s practical activities, which was to be submitted to the examination board, as the board considered all the calculations made by the student to the drawings of the steam engine and turbine and to the project in one of the mechanical production industries studied at the school (or in electrical engineering) (AOAV. F. 319a. D. 7. L. 25-25 rev.). Concentration of the entire production practice in one enterprise, in our opinion, allowed not only to improve coordination, monitoring and counseling of the students but also provided a more systematic approach to forming their competencies through familiarization (i.e. observation and demonstration of work activities) and participation (i.e. doing exercises and using active training methods) of the students in all cycles of the production process of certain products, as well as in the activities of various functional production units. This statement can be proved by the conclusion of the 1912 examination board on mechanics that consisted of teachers and engineers of the industrial plant, “Practical work activities on mechanics were performed excellently, the college staff made a full use of the possibilities of the students’ constant interaction with numerous factories and workshops of the industrial plant” (AOAV. F. 319. Op. 1. D. 508a. L. 9).

The curricula of commercial colleges as educational institutions being quite close to comprehensive school did not involve practical training. They only carried out practical exercises in particular subjects. The larger, in comparison with the state schools, freedom of these schools and the corresponding environment became the basis on which a number of innovative ideas concerning practical training were implemented. The first congress of directors of commercial colleges in 1901 made an appeal to introduce the solution of problems “taken from real life and having a place in life” into practical training. Based on specific examples of describing that approach and its characteristics such as “designed practical exercises,” the same task for the entire class “under the teacher’s direct supervision”, “one such independent work will teach incomparably better than even a conscientious study of ... a textbook” (Materialy, 1901: 132-134), we can discuss mere beginnings of the introduction of active and project-based teaching methods in a commercial college. The positive results of their use can be more objectively traced as remembered by the graduates rather than by analyzing the teachers’ reports. Thus, B. Simonov, the head of the Kirov control laboratory for measuring equipment, recalled that during the time he studied

merchandising at the Vyatka Commercial College (VCC) their class was divided into several groups, each was given a specific task. His group studied soap: first, the teacher recommended certain literature for them to read, and then suggested making soap themselves. The students were given money to buy beef tallow and vegetable oil, which were not provided by the laboratory, and then they made grained, marble and liquid soap according to the instructions found in the literature. After that, the teacher suggested making toilet soap, in particular, the so-called “Kazan soap” made with the addition of nitrobenzene. The students were again recommended certain books, then they “quite independently” prepared nitrobenzene in the laboratory and then made “Kazan soap” (Chunikhina, 1958: 154).

We can trace the practical training of those studying merchandising on the materials of trade colleges. Upon completing their third grade, the students at the Kazan Trade College (KTC) were sent to get practical experience to the commercial and industrial establishments of Kazan during their summer vacations. Thus, in 1913, 18 students became trainees. The school’s pedagogical committee sent 38 letters to various companies and institutions, six of which agreed to accept the students (NART. F. 312. Op. 1. D. 32. L. 1). Although the traineeship was supposed to last at least two weeks, some students worked much longer (NART. F. 312. Op. 1. D. 32. L. 10, 12). At the end of the practice, all the students received practical training certificates.

4.4. Practical activities during the navigation period: water transport and nautical schools

No other type of vocational schools had its industrial practice so closely tied to the time of year as the water transport colleges. Since the opening of navigation (not earlier than April 1) to October 1, students of water transport colleges made a practical navigation by riverboats. Senior graders worked as helmsmen and pilots, whereas other students worked as sailors. Thus, in the 1913-1914 academic year the students of the Kazan Water Transport College (KWTC), “were taking part in practical navigation onboard of river steamboats in the following ranks:

Captain’s mate – 6
Watchman – 8
Trainee – 20
Helmsman – 4
Sailor – 14” (Otchet, 1915a: 19).

A KWTC trainee had a navigation log and drew a map (in the Volga river map that every student had available; he made “corrections to the changing midstream of the river, putting down signs to find the fairway,” as well as pointed out “hydraulic structures, distinctive coastal and waterborne signs, etc.”). He finally received an assessment mark for that, the one that was crucial for transfer to the next grade along with the exams results in theoretical disciplines. This form of reporting was inspired by the head of the school even before the KWTC establishment, when he, while preparing a report on water transport colleges, was “at times exchanging letters with the captains of steamships where students would work as trainees”. (TsANO. F. 1770. Op. 549. D. 7. L. 21 rev.).

In their logs, the students of the Oryol Water Transport College (OWTC) put down various cases, accidents, acts, as well as gave a characterization of the river, drew the scheme of the steamship and difficult rifts (Otchet, 1916: 19). However, a year earlier, i.e. in the third year since the college had been established, the students’ logs, “contained various cases of practical navigation, order of work, sketches of the fairway, types of vessels and drawings of interesting details they encountered” (Otchet, 1915b: 17). In the latter case, one can conclude that the set of tasks for practice was rather superficial. That might have been due to the specifics of organizing the practice and individual characteristics of both the teachers and students; though in terms of chronological comparison, a gradual improvement in the forms of practice reporting can be seen. This is supported by the fact that all the KWTC documentation, related to the organizational aspects of the practice, was compiled in a strict unified form, including requests to accept the student as a trainee as well as the student’s reporting form addressed to the head of the college informing the latter of the fact that the student had been accepted to improve his practical navigation skills (TsANO. F. 1770. Op. 549. D. 18. L. 1).

Of great importance for obtaining practical skills in the specialty was the position (or the range of duties, if the student was taken as a trainee without any temporary employment) which

the student took during the practice. For example, the students of the Astrakhan Nautical College (ANC), while onboard of a training ship, studied marine service in practice, carrying, as crewmembers, watch-keeping duties, participating in shipboard, emergency and alarm works, also performing special practical tasks at a given time (Vinogradov, 1908: 59). If a student carried out auxiliary or other activities that did not meet his specialty during his traineeship, then, obviously, he received a superficial experience or even got a wrong idea of the nature of his future professional activities. Thus, M.V. Cherepanov, the head of the KWTC, explained this situation at the III Congress of Russian specialists on vocational education. In his report, he mentions, that senior graders of water transport colleges, those who had had a few navigations, were accepted to the steamship crew as helmsmen or pilots. Other students with no experience in navigation were taken as crewmembers above the specified number on tow-boats; they were eventually turned down by passenger ships due to the lack of space for an extra person. However, the trainees “that are accepted as sailors, tend to become like other crewmembers, and by doing unprofessional duties and simple work of the river steamship sailor, develop only physically without acquiring proper practical knowledge; and besides, being in constant contact with the sailors, such students are exposed to the corrupting moral influence of the sailor environment. Those students, being accepted as extra people above the specified number of the crew of the ship, sometimes without being paid, perform such duties, which are considered as being not worthy taking the deck crew away from the work, such as keeping guard at the gangway, mopping the deck, running on errands and so on” (TsANO. F. 1770. Op. 549. D. 7. L. 200-200 rev.).

Nautical schools trainees were rarely admitted to using navigating tools and equipment because of the fear of their damage by the students, the provision of private ships with such tools being quite insufficient. The traineeship as a sailor deprived the student of his free time and a proper place to perform his practical tasks for the college as well as to improve the acquired knowledge. For a trainee, the position of a sailor was not the worst outcome as he received payment from a private shipowner, but if he was accepted as a “pupil,” then he himself had to pay the shipowner. The pupils who got on the training ship were provided for, including free food and laundry, at the expense of the ME, though a certain part of the expenses was covered by the nautical colleges’ special funds (Vinogradov, 1908: 58-60). However, when discussing the draft of the reform of nautical education, the ANC trustees board suggested that the traineeship “be performed by students on commercial vessels, and not on training ones” (Mneniya, 1910: 221). The reasons for such proposal are unclear, we can only assume that independent practice, including finding a ship to have practice and concluding an agreement with its owner, allowed the trainee to get “directly” engaged in real-life conditions of subsequent labour activities and master different types of such activities. The experience of the Nizhny Novgorod Water Transport College might serve as proof to that version. The governor of Nizhny Novgorod, N.M. Baranov, a patron of the college, who himself was a former naval officer, in an effort to provide students with a decent income, asked shipowners to accept those students as assistants and cashiers. However, due to the fact that the trainees were actually not prepared for such a complex, and even administrative, activity, the shipping companies tended to turn the students down under plausible excuses. Later, a special position of a “trainee” was introduced whose responsibilities included helping the cashier and assistant. Moreover, for employment, one had to have a certificate of a preliminary practical knowledge issued or signed by a person/persons the shipping company was familiar with; in this case, the recommendations issued by the vocational school’s board of trustees became null and void (Dvadtsatipyatiletie, 1912: 40-43).

However, the practice bases themselves had problems with the education of their employees as practice managers from certain enterprises and companies. As a significant problem in organizing the practice of students of river transport colleges, the KWTC administration directly referred to the lack of special education, and often the lack of literacy and even the fact of total illiteracy of most of the captains of river steamships, especially tow-boats, which made them mediocre student supervisors (Ocherk, 1915: 12).

If in secondary vocational schools industrial practice was closely related to school subjects and was to provide students with the initial professional experience, thus consolidating, generalizing, expanding and deepening their theoretical knowledge through its application in real-life activities, then in lower vocational school, it was practical training that almost completely replaced theoretical training.

5. Conclusion

5.1. Practical training was the most innovative element of the educational process in a secondary vocational school due to the need for it to be adequately aligned with actual industrial practices for modernizing the country's economy. Because of this, in the reform of practical training, a combination of the positive position of the educational bureaucracy and the proposals of the social-pedagogical movement could be observed. This was reflected in the increasing role of practice in the educational process as more academic hours were allocated for such activities, reporting documentation was gradually improved, which included a detailed report, student's log and review from the practice base. In addition, active teaching methods were being implemented at that time.

5.2. All the basic traditional methods and forms of industrial practical training used in modern vocational education were already introduced in the pre-revolutionary school. Practical training was implemented in the forms of practical classes in academic disciplines, in the specialty in college laboratories and workshops, and traineeship at specialized enterprises.

5.3. Despite the fact that forms of practical training were striving for uniformity, their dependence on the types of vocational schools and areas of training was quite substantial. However, by the beginning of the 20th century, in general, it was the priority concept of teaching first practical actions that characterize the functionality of lower-level workers and specialists and then forming skills within secondary vocational education that prevailed in the system of practical training of secondary vocational school students. This consistent alignment corresponded to the logic of the formation of basic and special skills, but clearly demonstrated the lack of continuity between lower and secondary vocational schools in terms of training personnel and any introduction of polytechnical education into the system of secondary education with the rare exception of high-quality optional manual labour classes in certain schools.

5.4. A common feature that all the practices outside of the educational institution shared was a set of administrative functions to be learned by the trainees who were going to take employment positions that required combining the functions of specialists and middle-ranking managers. At the same time, the school structure itself did not allow to prepare leaders or innovators, and vocational schools had to pay special attention to this functionality in the normative documents concerning the practice through a bureaucratic system of prohibitions and behavior restrictions. The educational authorities had a similar trend: they had introduced a safety system, but avoided covering the costs of its introduction.

5.5. Lack of permanent bases of practice and difficulty in finding and selecting them, as well as the independence of these bases from the school that did not appoint the practice leaders from the educational institution can be considered among the problems of industrial practices of that time. This led to, among other things, to the lack of control over the trainee's activities, as the students were likely to be treated by the enterprises as an auxiliary personnel engaged in doing the tasks that had little in common with the trainee's specialty. All that was aggravated by the motley contingent of vocational schools.

5.6. By the beginning of the 20th century, the increasing demand for specialists made it possible for trainees to do practical activities and be paid for that, while vocational school allowed to start selecting practice bases and assign students to particular bases, which in general positively affected the quality of students' training.

References

[AOAV](#) – Arkhivnyi otdel administratsii g. Votkinska Udmurtskoi Respubliki [Archival department of administration of Votkinsk of the Udmurt Republic]. Votkinsk, Russia.

[Chunikhina, 1958](#) – *Chunikhina, E.N.* (1958). Put' dvadtsatiletnei pedagogicheskoi raboty: iz opyta raboty pedagogicheskogo kollektiva [Twenty years way of pedagogical work: from experience of pedagogical collective]. – Moscow: Izdatel'stvo Akademii pedagogicheskikh nauk RSFSR. 168 p. [in Russian]

[Dvadtsatipyatiletie, 1912](#) – Dvadtsatipyatiletie Nizhegorodskogo rechnogo uchilishcha: 1887-1912 [Twenty-fifth anniversary of the Nizhny Novgorod river school: 1887-1912]. (1912). Nizhnii Novgorod: Tipografiya S. Petrov. V, 132 p. [in Russian]

[Grigoriev, 2006](#) – *Grigoriev, E.I., Kirichenko, A.V., Denisenko, N.N.* (2006). Kazanskoe promyshlennoe uchilishche, 1890-1917: istoricheskiy ocherk [Kazan industrial school, 1890-1917:

historical sketch]. Kazan: Novoe znanie. 124 + 18 p. [in Russian]

Laurson, 1916 – Laurson, A.M. (1916). Spravochnaya kniga dlya uchebnykh zavedenii i uchrezhdenii vedomstva Ministerstva narodnogo prosveshcheniya [Reference book for educational institutions and institutions of department of the Ministry of national education]. Petrograd: tipografiya V.D. Smirnova. XLIV, 1154 p. [in Russian]

Litvin, 2016 – Litvin, A.A. (2016). Availability of Russian archives and illusion of the source study updating: What Russian and foreign researches dealing with the documents should know. *Man in India*, 3(96): 711-717.

Magsumov, 2018 – Magsumov, T.A. (2018). Apprenticeship in Secondary Vocational Schools During the Economic Modernization in Late Imperial Russia. Part 1. *European Journal of Contemporary Education*, 7(4): 918-926.

Materialy, 1901 – Materialy po kommercheskomu obrazovaniju: Vyp. I. Kommercheskie uchilishha [Materials on commercial education: Vol. I. Commercial schools]. (1901). Sankt-Peterburg: Tipografiya i litografiya V.V. Komarova. VIII, 163, III p.

Mneniya, 1910 – Mneniya i otzyvy zainteresovannykh uchrezhdenii i lits o reforme morekhodnogo obrazovaniya v Imperii v svyazi s novymi zakonami o sudovoditelyakh i mekhanikakh torgovogo flota [Opinions and responses of the interested institutions and persons on reform of seaworthy education in the Empire in connection with new laws on boatmasters and mechanics of merchant marine fleet]. (1910). St. Petersburg: tipografiya V.F. Kirshbauma. VIII, 643 p. [in Russian]

NART – Natsional'nyi arkhiv Respubliki Tatarstan [National archive of the Republic of Tatarstan]. Kazan, Russia.

Nizamova, 2013 – Nizamova M.S. (2013). Sotsiokul'turnyy oblik i povsednevnyy uchashchikhsya professional'nykh shkol dorevolutsionnoy Kazani [Socio-cultural image and daily life of vocational schools students in pre-revolutionary Kazan]. *Siberian Journal of Life Sciences and Agriculture*, 11: 160-168. [in Russian]

Ocherk, 1915 – Ocherk desyatiletnei deyatel'nosti Kazanskogo rechnogo uchilishcha 1-go razryada [Sketch of ten years' activity of the Kazan river school of the 1st category]. (1915). Kazan: Volzhsko-Kamskaya pechatnya. 44 p. [in Russian]

Otchet, 1915a – Otchet o sostoyanii i deyatel'nosti Kazanskogo rechnogo uchilishcha za 1913-1914 uchebnyi god [Report on the status and activities of the Kazan river school for the 1913-1914 academic year]. (1915). Kazan: Tipo-litografiya M.A. Semenova. 29 p. [in Russian]

Otchet, 1915b – Otchet o sostoyanii i deyatel'nosti Orlovskogo rechnogo uchilishcha Ministerstva putei soobshcheniya za 1914-1915 uchebnyi god [Report on the status and activities of the Orel river school of the Ministry of Railways for the 1914-1915 academic year]. (1915). Orlov: Tipografiya V.P. Mikhailova. 30 p. [in Russian]

Otchet, 1916 – Otchet o sostoyanii i deyatel'nosti Orlovskogo rechnogo uchilishcha Ministerstva putei soobshcheniya za 1915-1916 uchebnyi god [Report on the status and activities of the Orel river school of the Ministry of Railways for the 1915-1916 academic year]. (1916). Orlov: Tipografiya V.P. Mikhailova. 27 p. [in Russian]

Saratovskoe, 1903 – Saratovskoe promyshlennoe uchilishche. 1899-1903 [Saratov industrial school. 1899-1903]. (1903). Saratov: tipo-litografiya P.S. Feokritova. 418 + 20 p. [in Russian]

TsANO – Tsentral'nyi arkhiv Nizhegorodskoi oblasti [Central archive of the Nizhny Novgorod Region]. Nizhny Novgorod, Russia.

Uchebnye plany, 1891 – Uchebnye plany, programmy i poyasnitel'nye k nim zapiski dlya srednikh khimiko-tekhnicheskikh uchilishch [Educational plans, programmes and explanatory notes thereto for the average chemical-technical schools]. St. Petersburg: Tipografiya V.S. Balashova. 1891. 62 p. [in Russian]

Vinogradov, 1908 – Vinogradov V.V. (1908). Sovremennoe polozhenie morekhodnogo obrazovaniya v Imperii [The modern provision of seaworthy education in the Empire]. St. Petersburg: tipografiya M.A. Aleksandrova. [4], 75, [2] p. [in Russian]