



Common Legacy: Evolution of the Institutional Landscape of Soviet Higher Education

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The objective of this chapter is to present the common legacy basis for the chapters devoted to specific post-Soviet countries.

“Classical” Western literature on Soviet higher education paid little attention to the institutional landscape and its evolution. It focused mainly on ideological training, limited autonomy and narrow specialization. Recent advances in higher education studies call us to re-examine the Soviet experience from the angle of institutional differentiation. We shall explore the following questions: How was the structure of the Soviet higher education system designed and how did it evolve? What were the drivers of horizontal and vertical differentiation within the system? How did this structure manifest itself in different Soviet republics?

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The literature on the issue of institutional diversity (e.g., Huisman 1995; Reichert 2009) suggests that the process of differentiation (both vertical and horizontal) accelerates with the massification of higher education. The Soviet experience shows that this is not a universal rule. We argue that the Soviet authorities used differentiation as a powerful tool of the state to build a socialist higher education system almost from scratch.

This was one of the first attempts in history to materialize the utopian socialist ideal of a “correct” system that operates not by the influence of individual and institutional choices but as a machine—through clear and universal rules and prescriptions.

Clark called this “the purest case of the triumph of the state over oligarchical and market interaction” (Clark 1983, 142). In our view, this is a simplification. The key feature of the Soviet system was not just state control over the higher education system. It was rather the fact that the state combined the functions of manpower producer and principal employer that defined the system. This is the case, for instance, in corporate systems of staff training. One might therefore call such a system “quasi-corporate” higher education.

This was an element in a grand social engineering project—a master plan¹ for a system where higher education institutions (HEIs) were specialized parts of a state-controlled machine for manpower production, for the production of a “new man” and for reshaping the social and ethnic structure of the country. We use the metaphor of a machine not simply because higher education was constructed by social engineers. For us, this metaphor stresses the integrity of the system, reflecting Lenin’s notion of a socialist economy as a rationally organized “single common factory” (Lenin 1967, 101) as well as Stalin’s conception of Soviet society as a “socially unified camp...using education as a weapon” (cited by Kuraev 2016, 8). The carefully forged links between this machine and other parts of the “factory” or “camp” allow us to call this system “quasi-corporate”, with reference to modern corporate universities. We agree with the researchers who stress the deep difference between the classical Western idea of a university and the Soviet university model (Kuraev 2016). Our analysis confirms that it was the main organizational principles of Soviet universities that defined this difference. At the same time, we consider that not only limited academic autonomy but also the inclusion of higher education institutions into the planning and distribution of manpower was the key organizational principle defining both the nature of academic work and the institutional landscape.

Some parts of the manpower production machine were broken in 1991, leaving the rest to spontaneously adapt to the new conditions and challenges. The individual compositions of different types of universities and their connections with the external environment that had existed in the various republics of the Soviet Union determined the path dependence of post-Soviet development of higher education in 15 countries.

This chapter starts with a discussion on the different attempts to find the right design for the higher education system. It describes the emerging variety of the types of the institutions and their externally managed relationship with the environment. We then discuss how the rigid structure of the higher education system in the country as a whole evolved over time. Finally, we present the structural features of higher education on the level of the constituent Soviet republics.

STARTING POINT: THE HIGHER EDUCATION LANDSCAPE BEFORE THE REVOLUTION

The Soviet Union was created in 1922 as a federation of four founding republics. By the end of the 1930s it had almost come to occupy the same borders as the old Russian Empire. This enables us to look at the state of higher education in 1916 in the Russian Empire as a starting point for the future transformations. The table below provides some information about the higher education institutional landscape before the socialist revolution.

From Table 2.1 (see also the data on pre-Soviet higher education in Tables A1–3 in the Appendix), we see that the traditional “comprehensive” universities represented only half of the total higher education scene. Half of all students attended a variety of professional HEIs.

Four structural features are particularly important in the context of further discussion.

First of all, the initial initiative to establish higher education institutions came from the Emperor. These institutions invited the first professors from abroad. The autonomy of these universities was very limited (Andreev 2014). Secondly, the Russian authorities considered the universities as an important instrument for holding Imperial Russia together. This is why they had a kind of master plan and founded universities in a number of provincial

Table 2.1 State HEIs in Russia in 1913

<i>Types of HEIs</i>	<i>Number of HEIs</i>	<i>Number of students</i>
Comprehensive universities	10	35,695
Law	4	1036
Oriental studies	3	270
Health care (medical)	2	2592
Teachers' colleges (pedagogical)	4	894
Military and naval	8	894
Theological	6	1185
Engineering	15	23,329
Agriculture	6	3307
Veterinary	4	1729
Art	1	260
Total	63	71,379

Source: Russia 1913 year ([1995](#))

cities, including those in “ethnic” territories. The first universities were opened in Ukraine and Tatarstan in the early nineteenth century. Two universities were re-established in the Baltics ([Andreev 2014](#)). However, modern higher education did not appear in Central Asia, the Caucasus or Belarus until the first post-revolutionary years.

Thirdly, the monopoly of imperial universities ended in the second half of the nineteenth century as other ministries began the establishment of more specialized higher education institutions, for example, the Mining Institute, Institute of Technology, Agriculture Academy and so on ([Saprykin 2012](#)). The establishment of these institutions manifested the government’s attention to the needs of the new industrial economy. Fourthly, at the end of the nineteenth century, non-governmental organizations also joined the state in higher education provision for groups that had previously been declined access. Women and representatives of the lower social classes received the opportunity to study in the non-governmental non-profit sector ([Kassow 1989](#)).

Thus, by 1917, Russia had developed a higher education system which included a number of features of the French and German universities ([Avrus 2001](#)). The Empire had quite a diverse system of higher education institution. From 1859 to 1914, the number of higher education students grew from 8,750 to 127,000, seeing the number of students per 10,000 population increase from 1.4 to 7.6 ([Kassow 1989](#)).

The Russian universities (including the specialized establishments) became strong centres of research. These universities trained several future Nobel Prize laureates and famous inventors, and helped Russia to become one of the strongest producers of new knowledge.

IN SEARCH OF A PERFECT DESIGN: FROM “UTOPIA” TO REAL SOCIALISM—1917–1928

The first anthem of the young Soviet state was “The International”, with its famous line “We will destroy all the world of violence/ Completely, and then/ We will build the new world./ – He who was nothing will become everything”. This reflected the intentions of the Soviet leaders to demolish all capitalist institutions and to implement the idealistic ideas of Marx and his predecessors (the utopian socialists) in the real world. Two obvious questions emerged after the Revolution with regard to higher education: what should an ideal higher education system be like, and what should be done with the “old” universities?

The first question was particularly difficult. Orthodox Marxism and the utopian socialists had not said much about higher education in particular. They had focused on mass (school) education. Their ideas reflected the general values of the Enlightenment and aimed for the wide dissemination of knowledge (Vasilkova 1989). The Russian Marxists had not devoted much thought to the specific form of higher education that would serve the new “state of workers and peasants” either. Three distinctive answers to the first question appeared after the Revolution (McClelland 1971). All these solutions had in common the idea that “education cannot help but be connected with politics” (Lenin 1957, 354) and that education should be linked with the real world. They also agreed that the “proletarianization” of the universities was an important goal (Safronov 2013, 55). However, the proposed institutional (organizational) forms for these three versions were quite different.

The strongest (initially) group suggested that higher education should be part of the general system of proletarian cultural dissemination. One of their intellectual leaders, Alexander Bogdanov, insisted that the Revolution should bring the proletariat broad possibilities to master knowledge to the highest level. His ideas about higher education reflected the European ideal of universalist education opened up for underprivileged groups. After the 1917 Revolution, he promoted and established the so-called Workers’

University—a system of programmes “built on cooperation between the teachers and students and leading proletariat, aiming towards mastering the highest achievements of science” (Bogdanov 1911). The supporters of this idea also promoted local higher education initiatives to establish “Proletariat Universities” in various cities, including several without any tradition of higher education (David-Fox 1997). They insisted on open admission to HEIs and a broad curriculum. As a result of this policy the number of HEIs had reached 278 by 1921—a threefold increase from 1914 (McClelland 1971). This group of new universities did not last long. The Communist Party leadership did not support grassroots movements. They also saw little value in the unregulated dissemination of broad knowledge for the “building of socialist society”. They started to close these universities or transform them into other types of institution. The students and professors of the Workers’ Universities protested as they thought that such universities should exist as “laboratories of new forms”. Their voices were not heard (Lapina 2011).

The second approach was based on Lenin’s idea of the party as the vanguard of the working class: “If one wants the working class to understand its interests and its situation, to control the political process, there is an immediate need for a leading group of this class, to be achieved by all means” (Lenin 1967, vol. 24, 37). The new Soviet leadership regarded a special type of higher education to be the main instrument in the training of new leaders, of a new Soviet elite. The first “communist university named after Sverdlov” was established in 1919 on the basis of several small higher schools for party leaders. The experience of this university was considered positively. The 10th Party Congress of 1921 directed the establishment of a wide network of Soviet-Communist higher schools in each region (including communist universities in the big cities) (Ivantsov 2011). This was a prototype for the Soviet system of higher education—a centrally controlled (by the Central Committee of the Communist Party) hierarchical system of organizations of several types with a standardized curriculum and rules for each type. Admission to these schools was restricted to those who had obtained a recommendation from the local party committee. The mechanism of mandatory job placement was also piloted within this system of training. The system had its intellectual centres: the Institute of Marx and Engels Studies and the Institute of the Red Professoriate (est. 1921). These institutions provided quality control and trained professors for the party higher education system (Leonova 1972). “The rise of this party system bifurcated higher learning, in policy as in

perception, as the Party created Bolshevik equivalents of academies, research institutes, universities, middle schools, and so on. It was party schools – more Marxist, more communist, and more proletarian than the old institutions” (David-Fox 1997, 3).

It is important to stress that one special type of these higher education institutions was developed to serve the “ethnic” regions—to train local political leaders. Two communist universities for active workers from foreign communist parties in the East and the West were also established in Moscow in 1921. After the establishment of the Soviet Union, the system was expanded to all Soviet republics. There were 45 communist universities in the Soviet Union by 1931.

Similar in structure and even larger in scale, a network of higher education institutions also emerged in the military sector. The old military colleges and academies were closed. The first Soviet military academy was established as early as 1918. In a couple of years the system of higher education under the Ministry of Defence included not only Artillery or Naval Academies but also Military-Medical and Military-Political Academies. Taking into account the place of the military in the Soviet system, it is not surprising that by 1980 there were 164 military higher education institutions in the USSR (Feskov et al. 2013). This constituted a significant sector of higher education—about 15 % of the whole system.

The third approach to the development of a new higher education system was similar to the second but had a very different objective. The leaders of the young Soviet state admitted that they needed trained specialists for the state-owned economy. The main principle of the higher education policy of the early 1920s was “the rigorous subordination of all other possible functions of education to the economic function. Gone was the effort by Narkompros to stimulate the general development of the individual and to achieve a psychological transformation of the masses. Greatly minimized was the attempt to achieve significant social change by means of a drastic increase in educational opportunities for working-class youth” (McClelland 1971, 828). This idea was in full correspondence with the dominant ideology of the planned economy and social engineering (Avrus 2001). The idea behind this new approach was clearly presented by the first minister of education: “We will not consider the desire, or the declaration, ‘I want to be a builder, and you are making me into a chemist’; we will say, ‘Here it is necessary to do what the Red Army does; it sends to specialized work those whom it deems necessary to send, and not

according to individual desire' (Lunacharskiy 1958, 135). The military analogy reflected the built-in enforcement mechanisms within the higher education system, including the recruitment of students and their job placement. Interestingly, this vocation orientation somewhat contradicted the Marxist view that narrow specialization has a dehumanizing impact and reflects the capitalist division of labour. This led the theorists of Russian education to the idea of polytechnic education, which implies the combination of a variety of practical skills and the theoretical basis for them (Fitzpatrick 1979). This could be called vocational orientation, but we would prefer to call it specialized practical orientation.

The implementation of this approach made the issue concerning the use of the universities inherited from the pre-revolutionary period even more pressing. The discussion in the party leadership ended in a practical solution—to use the existing network of HEIs as the basis for a future industry-oriented system while keeping rigid political control over them. This decision, supported by Lenin, strongly influenced the institutional landscape of the future higher education system. Instead of building the whole system from scratch as a “greenfield project”, the Soviet government decided to start the system with the socialist transformation of the existing universities. This determined the path dependence within the system and gave additional prestige to (and influenced vertical differentiation in) the “old imperial” institutions.

Soviet higher education also performed an important function of creating the Soviet intelligentsia and bureaucracy—“whole-hearted” supporters of socialism that had to occupy leadership positions in the economic and social sectors. Lenin believed that a good education is a prerequisite for leadership (Fitzpatrick 1979). This function was expanded from the party higher education institutions to the higher education systems as a whole. It determined a number of unique features of the Soviet system, with its mandatory (for all students) ideologically designed courses on Marxism and Communist Party history, massive affirmative action mechanisms, including remedial courses for children from working-class families to prepare them for university. Such orientation “also provided a significant source of compensatory legitimacy among a large and influential segment of the Soviet population” (Johnson 2008, 163). At the same time, this function did little to influence the institutional landscape.

The idea of manpower production as the dominant function of higher education institutions directed Soviet policy makers in their search for an

optimal organizational model in higher education. The Ministry of Education (the ‘People’s Commissariat of Enlightenment’, rather) fought with the Supreme Economic Council for control over higher education institutions. To make a long story short, one could say that these discussions almost ended with the beginning of the implementation of the first five-year plan in 1928.

Since then, the Soviet economy took on the form of a mega-corporation focusing on industrialization and military power building, which acted according to detailed and long-term planning, including manpower planning. The main parts of the Soviet higher education model were by this point in place.

The key role of the state in the economic sphere has been associated with planning production output, something which also applied to the higher education sector: the quantity of students and programmes for each institution was planned in accordance with the anticipated needs of different industries. In other words, the development of higher education was subordinated to the manpower needs of the economy. The most important link between the universities and industry that ensured higher education’s function as a producer of manpower was mandatory job placement for graduates, as regulated by planning the staffing needs through a list of specialties. Graduates who did not want to work at their assigned jobs could face criminal charges.

A fundamental feature of this quasi-corporate system was the specialization of its parts. This refers to the strict separation of elements, and their vertical rather than horizontal integration. The separation of research and educational activities reflected this principle (Graham 1967, vii; Clark 1983, 98–99). Industrial research institutes, defence laboratories, the Academy of Sciences, universities and subject-oriented educational institutions made up the research and education landscape. This peculiarity did not allow universities to link research and education in a consistent manner (Johnson 2008, 160). At the same time, the separation secured the directed and vivid development of science in the interests of national defence and the economy of the USSR.

Another type of separation was based on differences between fields and disciplines. Almost every sectoral ministry in the Soviet Union and its republics had its own specialized HEIs. These specializations reflected the extensive list of narrowly defined occupations within different sectors of the Soviet economy. Industrial universities (university factories) were an

important element of the Soviet system (Ushakov and Shuruev 1980), training students not just for a specific role in industry but also for a specific role at a specific factory. Along with strong coordination between higher education and the industrial agenda, this led to parallelism, an inefficient use of financial and human resources and often insurmountable barriers to movement within the system (Johnson 2008, 163). By 1990, 896 Soviet universities fell under the jurisdiction of one of over 70 agencies and organizations (Avis 1990, 6).

The complex structure of the Soviet higher education system is presented in Fig. 2.1.

Obviously such a complex “machine” could work only in a very rigid management model. Institutional autonomy was unnecessary in this “perfect” mechanism. The first Soviet university charter was exemplary “in its complete denial of autonomy, and in its subordination of university administration to the central governmental apparatus” (McClelland 1971, 828).

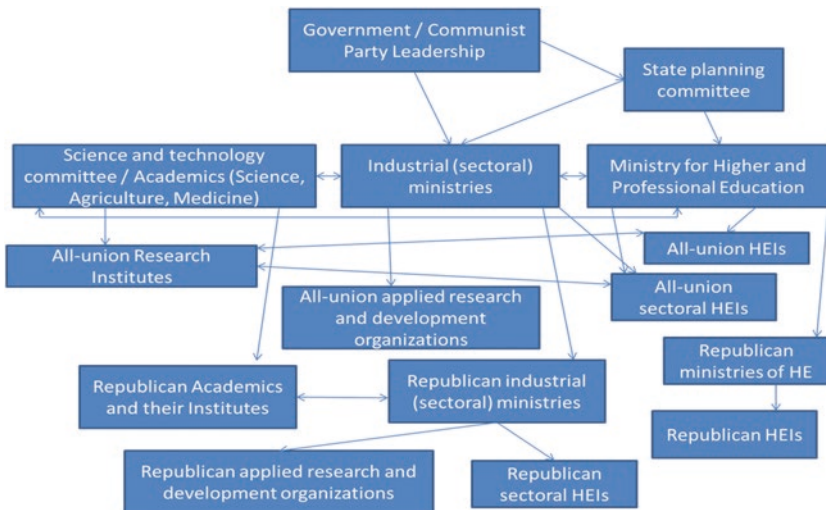


Fig. 2.1 Governance of Soviet higher education and research in the 1980s (Source: Zinov’ev and Filippov 1983)

TUNING THE MACHINE 1928–1940

The time between the start of the five-year plan and 1940 was a period of further enhancement of the organizational structures and mechanisms described above. The Soviet leadership considered higher education to be an important instrument for accelerating economic and social development. It was looking for the best governance and organization mechanisms not just in education but in the economy as a whole. Below, we discuss the various different directions to the further development of the quasi-corporate organization of higher education.

The main efforts of the higher education designers were focused on strengthening the linkages between higher education and industry. In April 1931, Stalin made a strong statement at the plenum of the Central Committee of the Communist Party: “Soviet industry needs Engineers, who are not only strong theoretically but strong in practical experience and in their link with production” (cited by Fitzpatrick 1979, 123).

The desire to build even closer links between higher education and industry led to the invention of a new type of higher education institution, the *zavod-VTUZ* (“factory university”). The essential features of this type are organizational integration of the higher education institution into a particular enterprise and inclusion of the practical work of students at this enterprise into the mandatory curriculum. In the late 1920s, a Central Committee resolution raised the status of in-factory training, allowing enterprises to adopt the title of *zavod-VTUZ* and to award degrees and diplomas. “For the radical communist theorists who wished to see a merging of education and production, the recognition of the *zavod-VTUZ* was a milestone on the road to socialism” (Fitzpatrick 1979, 201). This radical model did not receive wide dissemination (there were only eight such institutions by 1989) (Lyusev 2009). However, it influenced the whole system by stressing the role of practical experience in higher education. The *VTUZ* issue was not simply a question of institutional control, but was associated with a dispute on the kind of engineers that ought to be trained. The *Narkompros*² and engineering professors were in favour of the “broad” engineer according to the German model, which meant in effect that they were for the type of training currently offered in the engineering schools. The *Vesenkha*³ took the position that industry needed only a small number of “broad” engineers for planning and senior supervisory positions. The majority of engineers should be trained on the “narrow”

profile to be “specialists in a definite concrete and limited branch of industry” (Fitzpatrick 1979, 125).

As a result, a rigid and rich system of practical work as part of the mandatory curriculum was developed and introduced. Enterprises were obliged to take students and supervise them. The placement of students for this practical work in many cases became part of the overall planning process. These *links between the HEIs and enterprises became an important part of the higher education landscape.*

The idea of the *zavod-VTUZ* also influenced the opening of new narrowly specialized HEIs near the centres of corresponding industries. The Institute of the Linen Industry was established in the small town of Kostroma in 1932 by the Ministry of Light Industry and the Institute of Fruit and Vegetable Production in the town of Michurinsk in 1931.

For the autumn admissions of 1931, higher education institutions were instructed to enrol workers into *evening and correspondence courses* rather than as full-time day students (Fitzpatrick 1979). This marked an important step in enriching the institutional landscape by opening evening and correspondence courses at HEIs, and by establishing separate “correspondence universities”. By 1940, 18 such HEIs and correspondence courses in 383 HEIs were operating in the Soviet Union (Bim-Bad 2002). The links between industry and this form of education were ensured by the requirement that these programmes could enrol only those students working in a particular sector and that workers could only attend the programmes that trained for their sector of work.

The main changes in the institutional landscape in this period were primarily caused by experimentation in the establishment of specialized institutes and their separation from large multidisciplinary universities. This phenomenon was accompanied by these institutes being transferred to the jurisdiction of sectoral ministries. The implementation of this new educational policy, suggesting a large-scale reorganization and redesigning of curricula, led to an even more sophisticated and complex system that included a large number of relatively small and highly specialized institutions. Two new words captured the essence of the changes: *otraslirovaniye*, that is, the distribution of HEIs among sectoral ministries, and *vtuzirovaniye*, that is, the widespread dissemination of operating forms and methods of factory-specific higher technical schools (Andreev et al. 2012, 544). The restructuring was remarkable because of the way in which fundamental and applied disciplines were continuously and consciously detached from universities.

The examples are very clear. In 1930, the Moscow Mining Academy was divided into six specialized HEIs: geology, mining, oil, non-ferrous metals, steel and peat. Three faculties of Moscow's famous Bauman Higher School of Technology became separate institutes: aviation, energy and construction engineering. The Moscow Institute of Zootechnics was divided into even more specialized institutes: of horse breeding, meat cattle, sheep and goats, veterinary science and the breeding of animals for fur (Froumin et al. 2013). In some cases, "higher education engineers" from the government would not just divide existing universities into separate HEIs but put together parts from different institutions to create something new—the Moscow Institute of Bread Baking was formed on the basis of one faculty of the Bauman Higher School of Technology and one from the Moscow Chemical Technology Institute.

This process in the beginning of the 1930s gave rise to a burst in the number of new HEIs. While there had been 152 HEIs in the 1929/30 academic year, there were 579 of them in 1930/1931 and 701 in the 1931/1932 academic year (Chanbarisov 1988, 193–194). New universities were opened in the capitals of almost all Soviet republics between 1931 and 1934 (ibid).

The 17th Congress of the Communist Party in 1934 (known as the Congress of the Winners) summed up the results of the implementation of the first five-year plan and approved the second five-year plan. The Congress approved 14 main sets of measures to accelerate the social and economic development of the country. "Manpower training" was one of these key sets of measures linked with future economic victories. It gave a further impetus for the improvement of the higher education machine and its links with the external environment.

As research and development were moved from the universities, inconsistencies and intra-system contentions grew. In order to mitigate the risks, the authorities built special mechanisms to involve university staff in contractual research for state enterprises, and to involve specialists from the research institutes in part-time teaching at universities. Enterprises had to allocate some part of their funds to support contractual research and development at HEIs.

The authorities understood the risks of stagnation and deterioration of education quality in the absence of competition between universities and graduates. Therefore, the government created the so-called socialist competition between the universities and between similar faculties in different universities (Korotenko 2009; Kurasov 2015). It also created incentives

for the best students to enrol at the best respective institutions. Few leading HEIs had special right to run the admission exams one month earlier than all others.

This mechanical but orderly system, which satisfied the needs for staffing specialized research and development in the planned economy, was mainly formed in the late 1930s. The All-Union Congress of Higher Education Staff concluded in 1938 that “the goal of the reorganization of the network of the higher education institutions in the country has been completed. The new institutional landscape finally corresponds with the needs of the socialist state” (Bolshevik 1938, 3). This Congress specifically stressed that 3 HEIs be established in Kyrgyzstan, 14 in Kazakhstan, 16 in Georgia and 26 in Uzbekistan. The Soviet economic development plan became the only real driving force to transform the system. The universities did not provide feedback for this plan. They did not have any room for initiative in either their own development or the development of the economy and society.

As a result of this reorganization, three main types of HEIs then emerged (Froumin et al. 2014):

HEIs established on the territorial production principle. The essence of these institutions was the staffing needs of specific sectors at the regional level. Specialized universities, such as teacher training, medical institutes, polytechnics and so on, were established in each region or group of regions to correspond to their economic and social needs.

Some HEIs and groups of HEIs were subordinated to specialized ministries, for example, agricultural universities reported to the Ministry of Agriculture of the USSR. We call this type of institution *regional infrastructural HEIs*, as the primary function of this group was to staff relatively homogeneous economic sectors in the regions. These institutions were focused on local labour markets. Each specialized group of such universities included a few “leaders”, which were specialized infrastructural universities in the regional capital cities. These universities enjoyed additional benefits, such as methodological leadership and staff support from other institutions in the same field, such as the Moscow Medical Institute.

Specialized industrial HEIs focused on staffing a specific sector of industry on the national level. This group of institutions included specialized universities affiliated with the Soviet industrial clusters (e.g., transport engineering universities or aviation universities in the regions) and technical HEIs affiliated with particular factories or enterprises. This group also

included designated leaders who performed the role of methodological centres for other institutions in the same field.

Classical (comprehensive) universities that trained staff for other HEIs (especially in the basic sciences), staff for research institutes and personnel for local managerial elites (in economics, journalism, history and law).

Some universities were associated with mixed rather than pure types (probably as a result of specific historical circumstances). At the same time, if we try to relate each HEI to one particular type, the following picture emerges: the system comprised 6 % universities, 17 % specialized institutions of macro-regional significance and 77 % regional infrastructural HEIs in the end of 1980th.

Table 2.2 shows the formal classification of HEIs according to their field of specialization.

The specialization of HEIs reflected in this table was an important element of their horizontal differentiation. The prevalence of the specialized HEIs was an important feature of the Soviet system. A large share of the engineering training was also a peculiar characteristic aimed at rapid industrialization—almost 30 % of students in 1940 have been enrolled in engineering-related programs (see Tables A.6 and A.7 in Appendix).

Another important factor for the horizontal differentiation was the proportion of full-time, part-time (evening) and correspondence higher education programmes. Almost 4 % of the students were enrolled in evening programmes and almost 20 % in programmes delivered by correspondence in 1940 (see Table A.8 in Appendix). Moreover, there were some

Table 2.2 Number of HEIs in the USSR by the specialization of the institution

	1940/41
Total	817
Industry and construction	136
Transportation and communications	28
Agriculture	91
Economics and law	47
Healthcare, physical culture and sport	78
Education (including universities)	407
Art and cinema	30

Source: Narodnoye obrazovaniye i kultura v USSR: Statisticheskiy ezhegodnik [Education and Culture in the USSR: Statistic Yearbook] (1989). Moscow: Finansy i statistika

HEIs that had only evening and correspondence programmes (at least six HEIs in 1940).

This structure mainly reflects a very rich horizontal differentiation. It would be wrong to say that the *vertical differentiation* simply put comprehensive universities on the top of the hierarchy. The vertical differentiation had a number of dimensions.

The most obvious was that of administrative vertical differentiation. Part of the higher education institutions were subordinated to the All-Union Ministry of Higher Education or sectoral all-union ministries. The status (and often the funding) of these institutions was higher than under the republics' ministries. In various periods there were about 25–35 HEIs under the All-Union Ministry of Higher Education (Zinov'ev and Filippov 1983). Specialized HEIs were distributed between All-union and republican sectoral ministries. Their superiority was supported by special functions related to other universities. Usually these “central” universities performed quality assurance for similar universities; they provided in-service training and concentrated doctoral programmes not just for their own graduates but for those who had completed a “specialist” programme⁴ at another university. Graduates of these programmes were often sent back to their “alma maters” to become professors. This system was well structured: second-tier HEIs had quotas for sending their future professors for doctoral training.

Another dimension of the vertical differentiation was based on *prestige*. One could say that there were two prestige hierarchies: the all-union and the republic level. At the Union level, some universities were famous for training political or professional elites. They had particular support from the state. Some of these even scheduled their entrance exams earlier than those of other universities, to allow those who failed the chance to go to less prestigious places. At the republic level the comprehensive universities in the republican capital cities were usually more prestigious than other HEIs. It was very rare that less popular universities challenged the status quo. Such initiatives would not be supported.

Finally, we have to note another important feature of the Soviet higher education landscape—*territorial (geographical) distribution*. This aspect of the network's structure was influenced by two ideas: access and proximity to the production site. Broad access had been one of the major ideas of the Soviet master plan from its very beginnings. It was implemented through the “norms” of deploying regional infrastructural HEIs in almost all regions of the country. As one US geographer noted, “The distribution

of Soviet higher educational institutions conforms generally to the distribution of population... Large ethnic areas have universities, as do all large cities of Russia. ASSRs usually have universities, while autonomous oblasts have pedagogical institutes and autonomous okrugs have no higher educational institutions at all” (Andrews 1978, 456).

Many cities of sufficient population had their own teacher-training institutions. Some smaller cities that emerged around one big enterprise had branches or evening course sites affiliated to the specialized HEIs based in the big cities. The town of Novomoskovsk, for instance, built around a huge chemical plant, had a branch of the Moscow Chemical-Technical Institute; and the town of Stary Oskol, built around a metallurgical plant, had a branch of the Moscow Institute of Steel and Alloys. Some researchers counted the number of such branches at 300–400 by the end of the 1970s (Andrews 1978).

This structure and differentiation remained almost unchanged until the late 1980s. The number of HEIs in the USSR grew from 817 in 1940 to only 898 in 1989 (Statisticheskii sbornik 1989) (Fig. 2.2).

Since 1940 the higher education machine was running in the USSR within a “single common factory” on the basis of stable and clear rules and mechanisms.

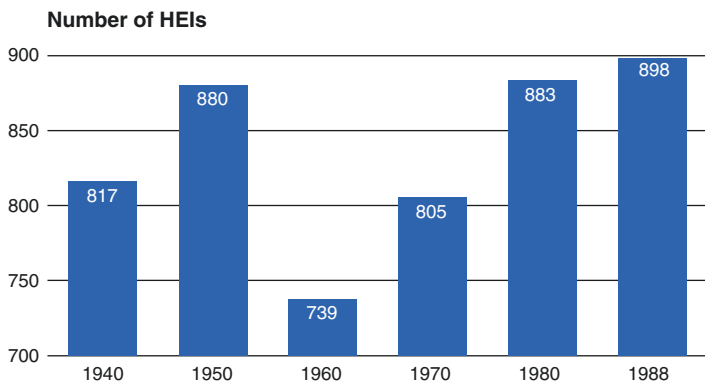


Fig. 2.2 Number of HEIs in the USSR (Source: Authors using data from *Narodnoye obrazovaniye i kultura v USSR: Statisticheskii ezhegodnik* [Education and Culture in the USSR: Statistic Yearbook] (1989). Moscow: Finansy i statistika)

FROM DEVELOPMENT TO STAGNATION 1940–1991

After 1940 there were no major innovations in institutional differentiation or in the instruments linking higher education with the external environment. At the same, there were several drivers for change.

Political changes included a degree of democratization and internationalization after Stalin's death in 1953—the “thaw period”. This created at least some opportunities for initiative and for bringing in international students. Some universities gained special departments for foreign students (helping them to raise their informal prestige and status and contributing to vertical differentiation). A special HEI for foreign students—the Peoples' Friendship University—was established in 1960.

Technological challenges associated with military competition with NATO called for the development of new fields of training. The period 1945–1980 saw the appearance not just of new departments within the established universities but also new HEIs specializing in these fields such as the Moscow Institute of Physics and Engineering aimed at supporting the Soviet nuclear research and industry.

The separation of research and higher education was a permanent issue for the Soviet higher education policy. The authorities insisted on the specialization of different organizations and on constructing formalized links between them. Researchers argued for more organic connection that could be achieved within the model of the research university. In 1938 the newspaper of the Central Committee of the Communist Party published an open letter of a group of leading scientists suggesting the establishing of the Higher Institute of the Technology to train engineers-researchers because existing HEIs train only those who can use existing technologies. They suggested that this Institute should employ only research-active professors and should give them all conditions for the research (*Pravda* 1938, #334). This letter did not have a big impact. However, the idea survived—in 1946 leading Russian physicist P. Kapitsa (Nobel Prize laureate) wrote to Stalin suggesting to establish the Moscow Institute of Physics and Technology that should train future engineers-researchers on the basis of the leading research institutes. He convinced Stalin with the arguments that only such training could assure the Soviet competitiveness in space and military industry. This institute was established in 1951 (it existed as a school at Moscow State University since 1946). However, it remained a rare example. Later Novosibirsk University was established with a special relationship with the Academy of Science. The closeness between these

HEIs and the Academy manifested in a simple fact—the majority of their professors were adjuncts belonging to the Academy. This model brought into question the separation that was embedded into the system.

In the late 1950s, the Soviet leadership became unhappy with the poor links between HEIs and the economy. They saw the problem as lying in weak planning and weak enforcement of administrative requirements. They “also seemed dissatisfied with an involuntary and seemingly often ineffective system for the “distribution” of graduates to job placements after their university training” (Johnson 2008, 164)

Two new laws were adopted to improve the links between higher education and “real life”, providing a regulatory framework for increased practical training in industry and agriculture, and to expand the network of *zavod-VTUZ* (Yelyutin 1980). Two provisions were specifically made in these laws to change the institutional landscape.

The first law suggested “making better order in the network of HEIs, aiming at the increase of the number of HEIs in the territories of rapid industrial growth, moving HEIs closer to production facilities, and the merger of HEIs working for the same sector” (USSR Law – 24.12.1958). This decision was not fully implemented, but a number of highly specialized HEIs were established in the regions of the Soviet Union. The idea of specialization as a solution to the inefficiency of the quasi-corporate system became even stronger than it had been in the 1920s. The implementation of this law led to changes in the distribution of HEIs in the country. Despite weak opposition from the professors, the Moscow Institute of Non-Ferrous Metals was moved to Siberia, and the Moscow Peat Institute was moved to one of the regions of Central Russia—closer to the industry concerned.

Western researchers positively noted the ability of the Soviet state to restructure the system: “Another undeniable dimension of the distinctive strengths of the Soviet system of higher education and research was the powerful (if often ponderous) bureaucracy that could “force” educational resources and professional talent “out and down,” out into the rural regions and nationality areas (Rosen 1963, 9).

The second provision could be considered as contradicting the first. It called for further development of universities in Russia to increase the supply of specialists in the basic sciences and to increase the role of universities in research. It also stated the necessity of “strengthening the network of universities in Russian Federation, especially in the eastern part of the country” (USSR Law—16.04.1959). In making this decision, the

authorities recognized the weaknesses of the “machine”—the problems that emerged from the separation between research and higher education. They also noted that the closed sub-systems of highly specialized higher education institutions prevented the building of links between technological development and the advancement of the basic sciences. These sub-systems did not feel the importance of linkages with comprehensive universities, so the government interfered once again to correct the imperfections in the machine’s operation. As a result of this policy, the number of HEIs in the country grew by 12 % from 1966 to 1975 and the number of comprehensive universities by 50 % (from 42 to 63) (Zykin 1992).

Opening new universities in the eastern part of Russia also demonstrated that the authorities regarded the establishment of higher education institutions as an important step in territorial development. The needs of regional development became a stronger driver for changes in the distribution of HEIs in the country. As a result of this policy, the total number of students in HEIs in the eastern part of the USSR grew almost twofold (Zykin 1992). Table A.5 in Appendix reflects the outcomes of the discussions and attempts to align the structure of the system constituted from highly specialized parts to the needs of the economy.

One could observe quite dramatic increase (almost 50 %) of the number of universities specialized in the “real economy” from 1940 to 1988. At the same time the number of teacher-training institutions declined at the same rate. Also the share of enrolment in industrial HEIs increased from 17 % in 1940 to around 38 % during 1960–1988 (Table A.6 in Appendix).

The growing number of students in evening and correspondence programmes (Fig. 2.3 and Table A.8 in Appendix) also contributed to the changes in the landscape (both in the horizontal and the vertical dimension). Eighteen “correspondence HEIs” and eight “evening HEIs” operated as separate institutions in 1963 (Kairov and Petrov 1964).

These changes in the institutional landscape stimulated a new round in the discussion about the governance of the system. “The administration of Soviet higher education has inevitably exacerbated inefficiency and inertia. 896 HIEs come under the jurisdiction of over 70 different ministries and organisations – a clear recipe for duplication and increased specialization of courses, sectional resistance to broader national goals and wasted resources, not to mention horrendous bureaucracy. Nor have branch ministries and economic managers generally been very eager to supply funds and equipment to the HEIs which provide them with a free supply of highly qualified workers. In particular, support for research in HEIs has

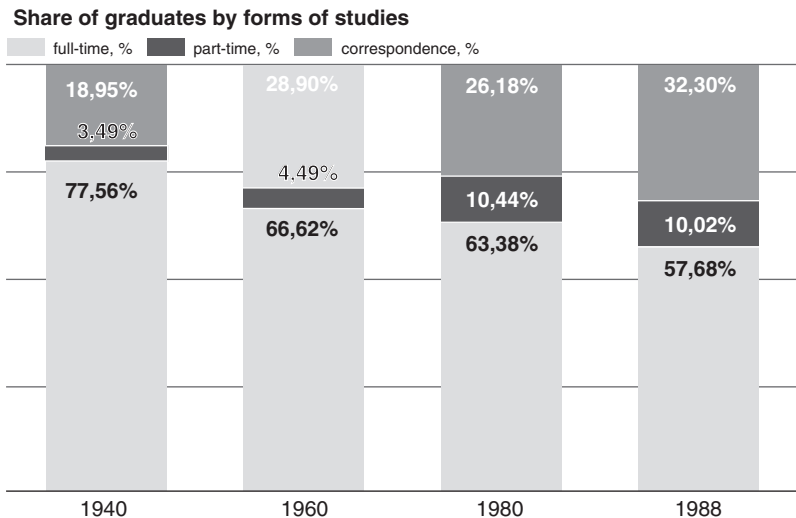


Fig. 2.3 Graduates by form of education (Source: Authors using data from *Narodnoye obrazovaniye i kultura v USSR: Statisticheskiy ezhegodnik* [Education and Culture in the USSR: Statistic Yearbook] (1989). Moscow: Finansy i statistika)

been weak” (Avis 1990, 6). The Ministry of Higher and Secondary Professional Education was not happy with the way the sectoral ministries ran “their” universities. The minister recognized that there was a contradiction between two trends: “the trend to concentrate the HEIs under the all-union and republican ministries of higher education...and the trend to govern higher education through individual sectors of national economy” (Yelyutin 1980, 46). He called for a compromise which would include a clear distribution of the responsibilities between the Ministry of Higher Education and the sectoral ministries. The machine had become too complex to function.

The compromise included stronger attention to “academic quality in the 1970s and 1980s, as the Soviet regime attempted to strengthen the role of regional universities and engaged in fitful attempts to combine research and education in new ways, for example by fostering cooperation between Academy of Sciences research institutes and universities. The nearly 900 exceedingly narrow specializations of the Stalinist era were narrowed to 300, and the policy emphasis was shifted to training ‘specialists of a broad profile’” (Matthews 1982, 43).

These discussions in the Soviet leadership confirm the attention paid to institutional differentiation. As M. Johnson noted, “Thus, while rigid and dogmatic in many ways, the Soviet higher education system at least attempted to sustain and, in its later years, to improve “systemic coherence,” between the various components of education and research; between higher education, professional training, and economic development; and between the union republics and various other constituent parts of the U.S.S.R.” (2015, 6)

HIGHER EDUCATION IN THE REPUBLICS

The distribution of HEIs among the Soviet republics and the structure of the republican networks were important parts of the overall institutional landscape in the Union.

The development of higher education in the different republics gives us an idea of what the main elements of the Soviet higher education master plan were. The republican systems of higher education performed four major functions: economic development, ethnic cultural development, Russification and equalization of access.

Firstly, the Soviet leadership aimed at creating in each Republic a *higher education system sufficient for the functioning of the main existing sectors of economy*, including the social sector. This meant that each republic was to have a “normal” set of infrastructural HEIs. If the republic had a specific industry central to its economy, specialized HEIs were established to serve this industry. Ivano-Frankovsk in Ukraine had an Institute of Oil and Gas, Andizhan in Uzbekistan had an Institute of Cotton Culture, and Sukhumi in Georgia had an Institute of Subtropical Economy (Andrews 1978).

Another important aim was *to support the development of the ethnic culture* central for each particular republic. This meant the establishment of musical conservatories and institutes for ethnic cultural studies in almost every republic. It also led to the use of the local language as a language of instruction in higher education. In the 1920s and 1930s, there were even special institutions with the local language of instruction. Thus, in 1931, about half of the instruction at Ukrainian HEIs took place in Ukrainian (Martin 2001, 109). Even some branches of all-union HEIs started to use Ukrainian as a language of instruction. However, this trend was not supported politically—the Soviet leadership found that Russification was an important prerequisite for industrialization and closed or transformed these universities, leaving local language instruction mostly for the “culture-specific” departments.

As a result, the higher education systems in the republics also became an *instrument for Russification* and for maintaining the Union. This function was supported not just by teaching in Russian but by keeping major Russian higher education institutions as mentor institutions for similar HEIs in the republics.

The fourth objective was *equalizing access* to higher education between the republics. All republics had lagged behind Russia in the development of higher education in the early Soviet years. The Soviet leadership made large-scale efforts to develop higher education systems outside of Russia, to equalize the access to higher education in all parts of the Union.

Table A.14 in Appendix presents the changes in size of higher education systems within the Soviet republics counted in absolute numbers of students from 1940 to 1990. The Soviet higher education system expanded by more than six times, going from 811,700 students in 1940 to 5,161,600 students in 1990. In such republics as the Kazakh, Moldavian and Tajik SSRs, the rate of expansion in terms of absolute student numbers was higher than 2000 %. The lowest growth was in the Georgian (265 %), Ukrainian (348 %) and the Latvian SSRs (364 %) (Platonova [forthcoming](#)).

Up until 1970, the participation rate (measured as the number of students per population in the age cohort 20–24) grew dramatically in all republics. Nine republics (the Uzbek, Georgian, Azerbaijani, Lithuanian, Moldavian, Kyrgyz, Tajik, Armenian and Turkmen SSRs) gained the highest rates by the 1970s, and six other republics (The Russian SFSR, Ukrainian, Belorussian, Kazakh, Latvian and Estonian SSRs)—by the 1990s (see Table A.15 in Appendix) (Platonova [forthcoming](#)).

Table A.15 in the Appendix shows that success in equalizing access depended significantly on the share of rural population. This was more obvious in the capitals of the republics, where the number of students per 10,000 population ranged (in 1970) from 78 in Dushanbe and 81 in Ashkabad to 100 in Tashkent and Alma-Ata (with the exception of Tbilisi (177) and those capitals with a large number of HEIs subordinated to All-Union Ministries (as in Moscow or Kiev (146)) (Andrews 1978).

One could ask why such big differences in access existed for such a long time. Or, moreover, why they continued to grow over the years despite all efforts? First of all, the republics experienced different demographic trends. All republics with declining enrolment had to accommodate quickly growing young populations. Secondly, the development of higher education in the Eastern parts of Russia was the priority in the 1970s and 1980s.

Despite these differences in scale, the analysis confirms that the structure of the higher education network in each republic (including horizontal and vertical differentiation, as well as the links with the external environment) reflected in large degree the principles of the construction of the higher education system in the Union as a whole.

CONCLUSIONS

The evolution of the higher education landscape in the Soviet Union reflects the attempts to implement the utopian ideal of a rational social order. The Soviet higher education master plan was part of an ambitious social engineering project. As M. Johnson noted, “many of those systemic “strengths” were logical and functional only within the highly centralized and bureaucratized system of Soviet state socialism and the planned economy” (Johnson 2008, 165). This alignment between higher education and the economy worked relatively well within large-scale mobilization projects. However, the system suffered from bureaucratic automatism where “little or no allowance was made for professional initiative or institutional adaptability in the provision of higher education” (Johnson 2008, 165)

This quasi-corporate system could perform only in a specific enabling environment. The collapse of the USSR and the shocking marketization of higher education changed this environment, and quasi-corporatism had no chance of survival.

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NOTES

1. The editors of this books discussed if the use of the expression “master plan” is appropriate to describe the Soviet experience because there are big differences between the Californian master plan and that of the Soviet approach. However, the authors of the chapter use this expression because the Soviet authorities had quite clear rules of the rationing of higher education and included the plans of the development of the higher education institutions in the implementation of the 5-year plans of economic development in USSR. In a sense they had a few higher education master plans within these larger economic planning processes.
2. Ministry of Education.
3. Supreme Economic Council.
4. Equivalent to a master’s degree.

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