

The Pandemic as a Challenge to the Development of University Networks in Russia: Differentiation or Collaboration?

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Abstract As an inevitable result of Russia's higher education policies of the past two decades, new university leaders in and outside of Moscow and St. Petersburg have emerged, and vertical differentiation has increased. Inequality of educational potential has a strong regional dimension, exerting a considerable delayed impact on regional socio-economic development. Differences in universities' resources affected their ability to adapt their instructional, research, and administrative processes during the pandemic, thus broadening the education and research quality gap in higher education. Some regions may face an increased outflow of youth talent to universities based in Moscow and St. Petersburg, that will certainly weaken the socioeconomic growth prospects of Russia's regions.

The pandemic accelerated the debate over this problem and demonstrated readiness of universities for joint efforts. This leads to an expansion of policy to create a cooperative network of universities and their stakeholders so as to reduce institutional differentiation and promote exchange of experience and competence among universities. This paper investigates into the main characteristics of vertical differentiation in Russian higher education that had been in place when the pandemic broke out and determined whether universities succeeded or failed in switching to distance learning. Furthermore, lockdown measures and their economic impact on different types of

universities are analyzed. Finally, we discuss possible avenues and specific considerations for expanding cross-institutional collaboration and engaging stakeholders in university development.

Keywords higher education, vertical differentiation, the COVID-19 pandemic's impact on higher education, university networks.

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1. Regional Differentiation in Higher Education

The recent decades have witnessed an unprecedented worldwide increase in demand for higher education. Student population has grown more than three times faster than world population over the past 50 years [Gabdrakhmanov, Nikiforova, Leshukov 2019], giving rise to systems of mass (16–50% of an age cohort) and universal (over 50%) higher education [Trow 2007]. As the institutional landscape of education systems is growing more complicated, the network of higher education institutions (HEI) is getting more differentiated. Mass systems of higher education feature increased differentiation both vertically and horizontally [Cantwell, Marginson, Smolentseva 2018].

Vertical differentiation in higher education is normally understood as cross-institutional differences in educational quality, selectivity, resources, and reputation [Teichler 2008], while horizontal differentiation is defined as differences in universities' specialization, formats of learning, and function [Malinovsky, Shibanova 2020].

In a number of countries, the evolution of HEIs leads to vertical differentiation at more than one level; in particular, there are selective vs. mass universities. By some estimates, selective, or elite, universities represent 2 to 5% of all HEIs in the world [Altbach, Reisberg, de Wit 2017]. They produce positional goods [Marginson 2006] that provide access to social prestige and income-earning. Selective universities do not compete with other institutions for the entire student market; instead, they focus exclusively on talented candidates with high aspirations.

Complication of the institutional landscape is typical for Russia's higher education system, too. The number of universities more than doubled between 1991 and 2009 (or increased more than fourfold if branch campuses are considered). Naturally, such an expansive growth gave rise to new types of HEIs and increased both vertical and horizontal differentiation in higher education. Studies exploring university differentiation [Kuzminov, Semenov, Froumin 2013; Knyazev, Drantusova 2013; Platonova 2015] indicate that regional dimension of inequality is one of the most relevant aspects for analysis, not only in terms of higher education system development but also as a potential chal-

lenge to sustainable development of regions and cities. The COVID-19 pandemic accelerated the debate over the regional aspect of university inequality. This study adds to the scientific discourse and expert discussions on the increase in regional differentiation in higher education due to the pandemic.

2. Patterns of Regional Differentiation in Russia's Higher Education

The historically enduring gap in enrollment quality, selectivity, and resources between universities in different parts of the country has widened substantially over the last 15 years. Judging by changes in the average USE score of admitted students, academic differentiation was increasing for the entire student population in 2011–2017. Meanwhile, the student bodies of national research universities, federal universities, and «Project 5–100» universities were growing more and more homogeneous. This may be due to sort of a self-sustaining mechanism where applicants begin to perceive such universities as more prestigious and offering a higher quality of education, while universities enhance the quality of enrollment along with education [Zagirova, Romanenko, Makaryeva 2019]. As a result, half of Russia's regions have no selective universities with average USE scores of admitted student above 70 [Malinovsky, Shibanova 2020]. Only 5% of public universities (main campuses) that are not listed as leading have over 10% of their revenues coming from research and development and an average USE score of admitted student of over 65 [Platonova, Kuzminov, Froumin 2019]. This indicates a strong polarization of universities in Russian higher education.

Having tasked the system of higher education with creating modern research universities, the government focused on institutions that were most prepared for transformation—national research universities, federal universities, and universities with a special status—and gave them priority support [Froumin, Povalko 2014]. That effort culminated in launching the academic excellence program «Project 5–100». These measures had a significant impact on the scope and structure of university research [Matveeva, Sterligov, Yudkevich 2019] and gave rise to a number of strong research universities that not only contribute to national scientific and technological development and produce workforce for the economy but also promote socioeconomic development of their regions and macro-regions. All reforms implemented by the government have a common goal of demarcating the institutional landscape to facilitate governance of complex high-participation systems of higher education [Platonova 2015].

At least 37 similar initiatives have been implemented across the world since 2005 [Salmi 2015], predictably increasing vertical differentiation in national systems of higher education. Extension of the list of «Project 5–100» participants and the newly launched flagship university development program are important initiatives for university transformation, but they hardly cover 10% of Russian public universities.

Post-Soviet transformations also had different consequences for the development of sectoral universities, many of which lost their affiliation with and direct support from government agencies [Kuzminov, Semenov, Froumin 2013]. As a result, the evolutionary scenario of higher education network development increased the divide in enrollment quality, selectivity, and resources between universities [Abramova et al. 2020]. The regional dimension of this divide has to do, among other things, with regional socioeconomic contexts: differences in regions' financial stability underlie differences in educational quality and increase differentiation of access to quality education [Adrian, Bentabet, Vinokur 2000]. A high level of socioeconomic development ensures a better standard of living and is indispensable for concentration of resources, including human capital.

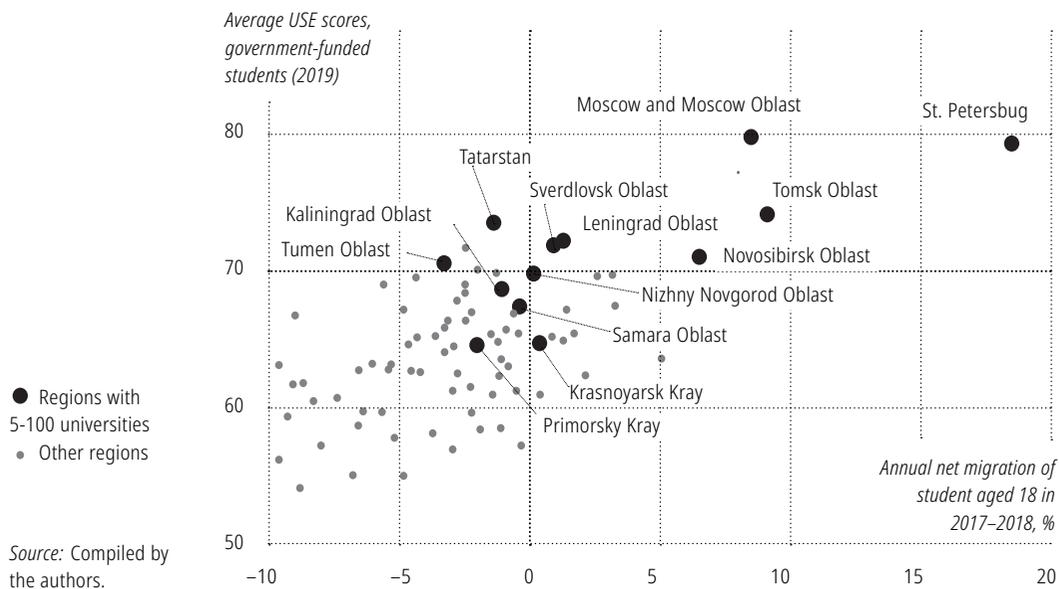
The reverse logic is also true: universities provide gross contribution to regional development [Valero, van Reenen 2019; Leshukov, Froumin 2017; Belyakov, Klyachko 2016]. In fact, vertical differentiation is increased through a self-sustaining mechanism: quality higher education promotes regional economic growth [Agasisti et al. 2020], while the region invests more and more financial and human resources in the university's development. As a result, some regions strengthen their positions, while others face long-term risks for their sustainable socioeconomic growth. Tolerating the increasing stratification in higher education means accepting the regional divide in the quality of life and socioeconomic development.

One of the long-term effects of stratification in higher education is the growing migration of talented young people, who are unable to obtain an education matching their ambitions where they were born, to specific regions. Figure 1 shows the correlation between average USE scores and academic migration. In 2017–2018, migration outflow of 18-year-olds was observed in 65 regions of Russia; as a result, 20 regions—nearly one in every three—lost over 5% of population in the respective cohort. In some remote regions, up to 30–40% of high school graduates choose to continue their education in a different region [Gabdrakhmanov, Nikiforova, Leshukov 2019].

Outflow of high-performing high school graduates escalates competition in recipient regions, thereby enhancing the quality of education in their universities and leading to degradation of educational quality in donor regions. Recipient regional economies benefit both in the short term, during the period of study, and in the long run, when university graduates stay to live and work in the region.

Access to government-funded education and allocation of enrollment quotas among universities are important factors of academic migration. Government policies are aimed at providing access to quality education while using resources efficiently. Besides, education accessibility should go hand in hand with extending the choice of educational opportunities and increasing autonomy of educational institutions. Solving those problems was one of the purposes of adopting the per

Figure 1. Annual net migration vs. average USE scores across regions

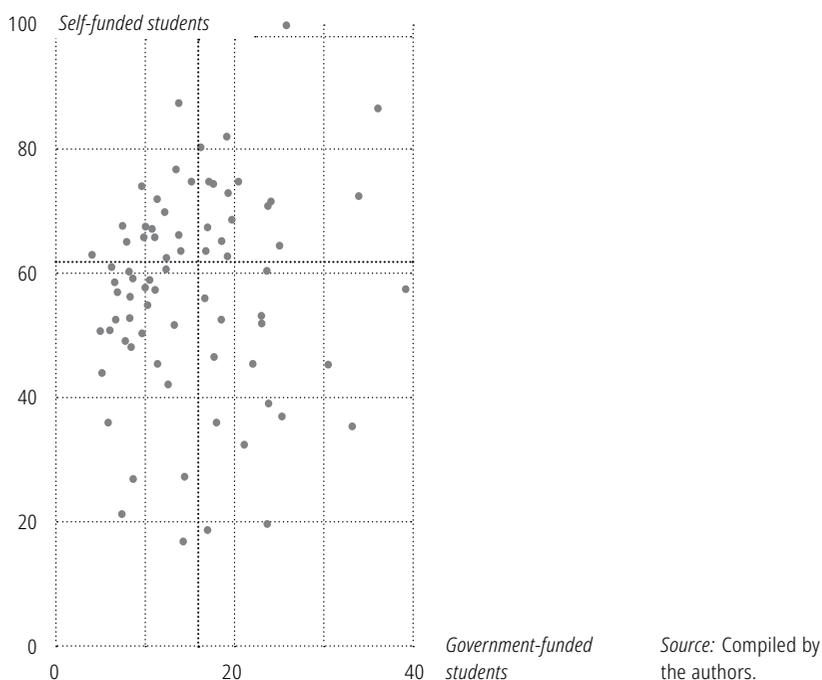


capita funding model [Abankina et al. 2016]. The principle of allocating the budgetary funds on a competitive basis depending on university performance is generally welcomed by universities and the academic community [Zarubina 2016]. However, a lot of questions remain as to the specific mechanisms and practices of such competitive allocation, and its consequences for the system of higher education have been subject to a lively discussion [Nurieva, Kiselev 2019].

There is an essential imbalance in the allocation of enrollment quotas among the regional systems of higher education [Gabdrahmanov, Leshukov, Platonova 2019]. The standard quota of “800 government-funded places per 10,000 population aged 17–30” is maintained at the national level but is not fully integrated at the level of regions. Deviation of the actual number of government-funded students from the quota remains within 10% only in 20 regions, being much greater in the majority of federal subjects. One notable example is Tomsk Oblast, where deviation from the “800 places per 10,000 population” quota exceeds 100%. This imbalance is largely contingent on the presence of leading universities with high quotas in the region, which aggravates regional disparities by providing additional incentives to applicants with better chances of admission.

Allocation of enrollment quotas among regions is imbalanced not only in the number of places assigned but also in their structure. Such structural imbalances are most prominent in the humanities programs, which have been traditionally popular among applicants despite po-

Figure 2. **Proportions of self- and government-funded students admitted to programs in the humanities and social sciences in 2019 across regions, %**



tential problems with finding a matching job in the future. Government-funded places are relatively few in the humanities, representing about 16% of total enrollment in the field. As a result, self-funded students enrolled in the humanities account for more than 60% of all fee-paying students.

Proportions of self- and government-funded students also differ greatly across the regions. Out of 76¹ regions analyzed, the ratio may be considered balanced in 44, where both proportions are higher (17 regions) or lower than average (27 regions). Seventeen regions demonstrate a relative shortage of government-funded places in the humanities and social sciences (Figure 2). The most outstanding example is Bryansk Oblast, where 4.1% of all government-funded students and 63% of all self-funded students were admitted to programs in the humanities and social sciences in 2019. As a result, 88% of the region's students in these majors were self-funded.

In regions similar to Bryansk Oblast, economic efficiency of universities largely depends on the market conditions. This is especially

¹ Regions with small university enrollments (fewer than 100 government-funded students and fewer than 50 self-funded students) were excluded from analysis to avoid outlier bias.

true for small regional institutions that are assigned very few government-funded places per program/major. Financial viability of such degrees is in serious jeopardy. In cases like that, the function of enrollment quotas as a means of supporting universities via government contracts is prioritized over their function as a factor of supply.

The pandemic crisis of 2020 revealed important patterns in higher education, including those in regional inequality of systems and universities. Because Russia's education system is characterized by isomorphism of institutions located within the same region [Maskaev, Savko, Oganessian 2017], it makes sense to analyze heterogeneity at the level of regional systems of higher education and the impact of the pandemic on universities across regions. This subject is also significant in a broader context, since the effects of stratification in higher education exacerbate the socioeconomic gap between regions, jeopardizing sustainable development of Russia's territories.

3. Regional Inequality in Higher Education: Challenges Imposed by the Pandemic

The COVID-19 pandemic became a stress test [Barannikov et al. 2020] for all Russian universities, but the speed of their adaptation varied greatly due to profound differences in the level of technology and competence. These differences have a strong regional dimension and are associated with gaps in the quality of secondary as well as higher education. The pandemic was a shock that made the accumulated imbalances more conspicuous. Universities had to respond promptly in order to adapt to the new operating conditions, and it was much easier for the institutions that had already started the process of transformation.

For instance, Ural Federal University had been planning to move 20% of its educational content to distance formats in 2020, so it had prepared for integrating new learning technology. When the pandemic broke out, the university was already using the course management system Moodle and the e-learning system HyperMethod, so a number of faculty members already had some experience with this software. As a result, the university concentrated its efforts on solving problems associated with system scaling, license purchases, and exam proctoring [Koksharov, Zagaynova 2020].

Below, we will have a closer look at the differentiation of universities by access to and the use of digital infrastructure, learning support practices, and the impact of the crisis on resources required for sustainable development of any organization.

3.1. Differentiation of Universities by Digital Infrastructure

As a result of active transformation along with substantial financial support, as compared to other HEIs, not only did the leading universities upgrade their existing infrastructure and create a new one but they also developed new competencies. Eventually, they had enough groundwork to start the process of digitalization, i. e. create the IT infrastructure, establish communications among students and faculty

with the use of digital platforms, train instructors, and develop and distribute digital learning content.

The lockdown exposed unpreparedness of learning management systems (LMS) in a number of universities. Over 88% of HEIs reported integrating LMS platforms, but only 45% managed to get them working under stressful conditions [Abramova et al. 2020], whereas the rest launched their systems nominally, partially, or experimentally [Karlova, Shvindt, Garev 2020]. At the beginning of lockdown, 19% of faculty members experienced difficulties using the necessary hardware. Over the first two months of the pandemic, this percentage reduced by one third only.

By the time the coronavirus lockdown was announced, 15% of universities did not even have a well-functioning system of online communication with students, which essentially limited the possibility of keeping them informed in a critical situation [Abramova et al. 2020]. Furthermore, even universities equipped with such systems often failed to notify their students and faculty about the new schedules and requirements. Only 60% of HEIs created dedicated websites or sections within their official websites to inform and support their faculty and other employees.

When the pandemic broke out, the universities with a special status had an established digital infrastructure that enabled them to change over to mass distance learning within a short period of time. High-performance Internet access points were available to all the leading universities covered by the survey on digital infrastructure, but only to 11% of the total sample. Medium- and high-performance access points were available to 94% of the flagship universities but only to 77% of the total sample. All the leading universities that participated in the survey disposed of medium- and high-performance data storage systems, as compared to 37% in the total sample. Finally, technical hurdles and network failures were reported more often by students enrolled in universities with no special status (54% of the respondents) than those in leading universities (48%).

Of course, the ability of even the leading universities to provide quality online education, especially in engineering and science, should not be overestimated. However, these universities possessed a wider array of tools for emergency adaptation to distance learning as they had started developing their infrastructure and promoting professional development well in advance, and did it consistently. The obsolete, often redundant and cost-ineffective infrastructure of universities in regions with small student populations limits their potential rather than being helpful in a crisis.

3.2. Differentiation of Universities by Learning Support Practices

Successful adaptation of universities to distance learning was indispensable for retaining educational quality. Pre-pandemic, 60% of faculty had virtually no experience of teaching from a distance. A few months into the lockdown, 5% of instructors in more successful universities

and up to 30% in mainstream institutions failed to learn how to use the tools necessary for distance learning. The consequences carried by such differences between universities in adapting to the distance learning format can be pretty grave. If 5% of the faculty fail to adjust to the new situation, educational quality will be affected very little as more experienced colleagues or digital volunteers will come to help. However, this additional workload will be impossible if distance learning technology has not been embraced by one third of the faculty. In this case, the university will practically switch to extramural education with all its shortcomings, thereby exacerbating the differentiation within the system of higher education.

Digital competencies in Russian higher education have been enhanced markedly over the past few years, yet they have been concentrated in a very limited number of universities. Nearly 1,000 Russian courses are offered today on three massive open online course platforms: National Open Education Platform (NOEP), Coursera, and Ed X. However, they were developed by fewer than 20 universities, even though faculty members from a number of HEIs have had a relevant experience when designing digital learning materials for intra-university purposes (Table 1). Out of 18 universities that offer their courses in one of the platforms, only six are located outside Moscow and St. Petersburg, five of these six being participants of the «5-100 Project». On the one hand, this is evidence of effectiveness of the project which provided top regional universities with resources for strategic development and enabled them to compete on equal terms with Moscow and St. Petersburg HEIs. On the other hand, the project increased regional differentiation in higher education, boosting the development of universities in Moscow, St. Petersburg, and the participating regions and extending their lead over other institutions of higher education.

However, digital learning materials are only one element, though a key one, in the organization of distance learning. A survey of students conducted during the first weeks of lockdown showed that 67 of 355 universities (18.9%) were unable to deliver some of their courses from a distance or online using their institutional resources. Due to program peculiarities, 6.5% of students were basically unable to complete their studies remotely. The biggest problems were faced by students enrolled in majors requiring lab work and dedicated equipment, art school students, and prospective social infrastructure employees [Shibanova et al. 2020].

3.3. University Differentiation by Resources

In terms of long-run effects of the pandemic, universities may suffer dramatically from a decline in household income, which can reduce demand for education, particularly among vulnerable social groups, and entail cuts in companies' spending on education, training, and R&D. In addition, the announcement of lockdown restrictions spurred a wide public debate over the fairness of pre-pandemic tuition fees under the new conditions. Eighty per cent of student survey participants report

Table 1. Russian courses on NOEP, Coursera, and EdX in the first half of 2020.

University	Number of courses offered on the platform			Total
	NOEP	Coursera	EdX	
St. Petersburg State University	131	61	–	192
National Research University Higher School of Economics	100	74	–	174
National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)	34	28	25	87
Peter the Great St. Petersburg Polytechnic University	67	16	–	83
Tomsk State University	23	54	–	77
Moscow Institute of Physics and Technology	20	48	–	68
ITMO University	52	–	14	66
Ural Federal University	52	–	6	58
National University of Science and Technology MISiS	37	–	2	39
Lomonosov Moscow State University	37	–	–	37
Moscow State Institute of International Relations	–	20	–	20
Novosibirsk National Research State University	–	18	–	18
Saint Petersburg Electrotechnical University "LETI" (ETU)	13	–	–	13
Tyumen State University	8	–	–	8
Samara National Research University	8	–	–	8
Bauman Moscow State Technical University	4	–	–	4
Industrial University of Tyumen	2	–	–	2
Russian University of Transport (MIIT)	1	–	–	1

Source: Compiled by the authors.

that their self-funded peers expect problems in paying for their tuition fees [Abramova et al. 2020]. Meanwhile, tuition increased by 15–20% in 2020 due to the pandemic and the transition to distance learning [Barannikov et al. 2020].

Over one third of university rectors expect their cumulative budgets to reduce by more than 10% in 2020–2021². Small institutions with low enrollment quotas for government-funded students and universities lacking resources and competence for effective adaptation will be affected by budget reductions most of all. An increase in vertical differentiation is thus highly probable. The earliest results of the 2021

² Survey of rectors conducted as part of the analytical report *Lessons from the Stress Test. Universities during and after the Pandemic* [Barannikov et al. 2020].

admission campaign demonstrate that the average USE score among admitted self-funded students has decreased in roughly one third of all Russian universities, as compared to only one in eight leading universities (Moscow State University, St. Petersburg State University, 21 Project 5–100 universities, and national research universities).

Patterns of student migration are also expected to change in the new context. The pandemic has raised the cost and risks of moving to another city as a result of tightened economic constraints faced by households, concerns about infection, and perceptions of digital learning formats as less valuable [Malinovsky, Shibanova 2020]. According to survey data, a number of university leaders believe that regional universities will get an increased inflow of students because high school graduates will not be ready to move to megalopolises such as Moscow and St. Petersburg in the first place. Consequently, social migration of youth from small towns and remote areas will decline, limiting the choice of educational opportunities for those who stay. It is in such localities that household economic constraints will be most likely to reduce demand for higher education. Educational and career trajectories will shift towards earlier entry to the labor market and preference of vocational schools over universities.

4. Post-Pandemic Prospects for University Network Development

Increased vertical differentiation in higher education is one of the possible effects of the pandemic. At the same time, the lockdown highlighted the need for inter-university cooperation. In the light of proactive approaches adopted by universities and regulatory agencies, the lockdown shock can be expected to promote the transition of the higher education system from a bunch of weakly interacting universities and quasi-competitive research institutes into a network of HEIs. This network could evolve resting on the principles of cooperation (with due regard to international practices) and stakeholder empowerment.

The early months of the COVID-19 lockdown demonstrated universities' readiness for mutual support in a crisis. Providing free online access to their online courses became a popular way for HEIs to show solidarity. Free online courses were announced by many universities in Moscow and St. Petersburg, such as National Research University Higher School of Economics³ or St. Petersburg State University⁴, as well as in regions, such as Ural Federal University⁵ or Tomsk State University⁶.

³ The First University Abroad Joins HSE's Free Online Courses: <https://www.hse.ru/news/edu/357674294.html>

⁴ SPSU Expert at St. Petersburg International Legal Forum: "Pandemic Calls for Solidarity in Higher Education": <https://spbu.ru/news-events/novosti/ekspert-spb-gu-na-pmyuf-pandemiya-trebuet-solidarnosti-vuzov>

⁵ UrFU Grants Open Access to Its Online Courses for All: <https://tass.ru/ural-news/8086803>

⁶ TSU Grants Open Access to Its Online Courses for Every Student in Russia: <https://>

The Ministry of Science and Higher Education of Russia produced a list of 581 online courses from 19 universities to be delivered at no charge⁷.

Still, this is not enough to eliminate inequality among HEIs. The cooperation scenario of higher education development implies elaboration of comprehensive solutions to allow for effective collaborations that involve not only universities but also their stakeholders. Getting access to learning content makes little sense unless the institution is able to make use of it, which means it should have skilled instructors and well-established management logistics, adapt its program portfolio to various formats of learning under emergency conditions, etc.

Achievement of this goal requires acting in three main directions: eliminate the existing infrastructural inequality, create conditions for improvement of educational quality in all universities, and review some principles of higher education system operation. Below, we analyze these three directions in more detail.

The importance of eliminating the existing infrastructural inequality became obvious during the pandemic: the inability of many universities to switch to distance learning rapidly was largely associated with the lack of necessary hardware, software, and technology. Access to infrastructure is a basic premise, the absence of which renders mitigation of regional inequality impossible.

To mitigate differences in the level of infrastructure in higher education, universities themselves should make an effort in the first place. Possible measures include audits of available capacity, optimization of capacity utilization and maintenance expenses, shared use of infrastructure by universities, etc.

Creation of conditions for improvement of educational quality in all universities can be promoted by providing system-wide support to the spread of leading universities' practices and thereby reducing the existing gap in educational quality. It is imperative to expand access to the best practices of Russian universities, for example by creating a national network to aggregate digital solutions and technologies (training simulation, etc.) and make them available for use by universities, research institutes, and—in a longer run—by secondary and vocational schools as well.

For the same purpose, universities should work out a unified approach to a number of components of the learning process in lockdown, including work placements and internships, laboratory and practical classes with the use of equipment, and assessments. This

www.riatomsk.ru/article/20200316/tgu-besplatnij-dostup-studentov-rf-k-onlajn-kursam/

⁷ The Ministry of Science and Higher Education of Russia Produces a List of Online Courses to Be Delivered at No Charge: <http://neorusedu.ru/news/minobrnauki-rossii-sformirovalo-perechen-besplatnyh-onlajn-kursov>; The list of online courses to be delivered at no charge: <https://www.minobrnauki.gov.ru/common/upload/library/2020/03/Spisok-onlayn-kursov-20200315-01.pdf>

will allow setting the universal minimum quality baseline in distance learning to reinforce communications within the university network. Expansion of cross-regional and intra-regional university (research institute) partnerships will provide not only for exchange of experience but also for development of new education and research platforms to host new world-class network education programs.

A similar but broader initiative consists in creating regional academic clusters on the basis of leading and flagship universities. Access to resources possessed by these universities will provide other cluster participants with technological platforms, methodological frameworks, and organizational solutions to deliver quality education. Another important measure at the federal level could be creating a network of regional resource centers to provide methodological support and access to equipment for laboratory and practical classes both online and offline. The transfer of practical classes in engineering and science majors online became the biggest challenge during the lockdown for all universities.

Review of some principles of higher education system operation requires involvement of not only universities and the Ministry of Science and Higher Education but also a wide range of university stakeholders. A more flexible and resilient system of enrollment quota allocation should be developed to offer more freedom of choice to applicants and at the same time provide for mechanisms to partially retain youth talent in the region. A legal framework for stakeholder engagement in university development should be created to integrate such mechanisms.

Expansion of higher education opportunities implies direct and indirect support for those willing to learn: partial tuition scholarships, long-term subsidized loans, etc. Such measures will contribute to mitigating the risks of decline in demand for higher education as a result of the pandemic and provide for a more flexible support of regional universities. Support measures may include academic certificates for talented high school graduates willing to continue education in their home region.

It would also make sense to look into the possibility of raising enrollment quotas in the fields of study with a high proportion of self-funded students and high-quality programs (programs that passed social and professional expertise and programs included in academic excellence initiatives) with due regard to regional development priorities and the existing imbalances in technology, social sciences, and humanities enrollment between regions. When allocating enrollment quotas, situations should be avoided where the quota is too low for the university to form a student group and reach the minimum efficient scale for the program without a considerable number of fee-paying students.

A cooperative network capable of reducing vertical differentiation in higher education should include not only universities but also a

broad range of stakeholders. An important step in this direction would be legal empowerment for local stakeholders to participate in university governance and maintenance, e.g. by cofounding federally funded universities from regional and sectoral initiative budgets, bringing regional innovation infrastructure under the coordination by universities, etc.

Some of the measures proposed here can find their way into the widely discussed project initiated by the Ministry of Science and Higher Education under the working title of Strategic Academic Leadership Program. The purpose of this program is to form a group of national university leaders to provide the economy and social sphere with scientific support, technology, and human resources. Its paramount priority will be creating consortiums of universities, scientific institutions, and real economy businesses to establish new cooperative networks and expand the already existing ones.

An important novelty introduced by the program is the practice of identifying candidate universities that do not meet the original criteria at the moment but have the potential to improve, which will receive financial support to implement their development programs. This practice will expand the pool of universities interested in the program. It suggests selecting 100–120 institutions of higher education, which is 16% of all Russian universities, or 9% of the aggregate network of HEIs (if main and branch campuses are counted independently). A substantial expansion of the number of participants is virtually impossible due to the lack of universities with competence and resources required for effective participation in the program. A critical aspect of program design consists in discussing support and development measures for all regional university networks so as to prepare concise education development programs for every region with the assistance of the Ministry, regional governments, leading universities in the region, and local stakeholders. Such programs should provide the basis for the federal initiative, coordinating regions' education development potentials and priorities with the federal level as well as across the regions.

5. Conclusion Vertical differentiation is an inevitable and indispensable factor underlying the system of higher education. However, excessive differentiation carries considerable risks and expenses for the system itself as well as for sustainable regional socioeconomic development. Active higher education policies of the recent decades have reached a lot of goals, yet they unavoidably sharpened institutional differentiation.

The pandemic exposed differences in universities' potential and in the ability of various system elements to adapt to the new conditions. Educational quality has remained at high levels in the leading universities, while plummeting in a number of other institutions. As a result, the pandemic has exacerbated the differentiation in higher education, and the ongoing crisis may widen this gap.

At the same time, having exposed the problem, the pandemic launched actual debate and search for solutions, and a lot of universities demonstrated their readiness for mutual support in a crisis. A context has arisen that is conducive to transformation of the education system into an effective cooperative network capable of reducing vertical differentiation. Promotion of network cooperation among universities is a mission whose relevance has been emphasized for years and which concerns the entire university community [Lobanov 2016]. A unique feature of the current situation is the opportunity to make good progress towards this transformation.

Certain steps have already been made in this direction. Enrollment quotas are being increased in all regions by order of the government. Parameters of the Strategic Academic Leadership Program allow expecting that this initiative will also contribute to progress on the way toward bridging the gaps. Solving the accumulated problems highlighted by the pandemic should become part of a long-term public education policy, in which initiatives presented in this study are major ingredients.

Translated from Russian by I. Zhuchkova.

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