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The Mechanisms of Admission to Universities and
the Accessibility of Higher Education

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Pushkin reading his poem at the Lyceum exam on the 8th of January 1815 by Ilya Repin

Dear colleagues,

This issue studies national admission systems to higher education and how the existing institutional framework is related to indicators of accessibility. There are various models of the transition from secondary to higher education, and institutional structure of the educational system largely determines educational policy, and also shapes the applicant's expectations for higher education. The student selection is associated with the general accessibility of higher education.

We start with the cases of post-Soviet countries, which had a common institutional legacy, experienced common problems, and transformed their admission systems to standardized exams as a response to the new challenges. Next, we focus on the admission system in Russia in more detail by describing the advantages of the Unified State Examination (USE), discussing Olympiads as the alternative way of admission to higher education, and considering the mechanisms of inequality under the standardized admission system. Two interesting international cases complete this issue. We study the experience of China, which is making the transition to a knowledge economy and is an active player in the international academic sector. The second case is Poland, which experienced the same political and economic processes as the majority of the post-Soviet countries, and where reforms in higher education were affected by these transformations.

The articles have been prepared by experts in the field of higher education: academic researchers and practitioners who administer national university admission systems. This combination allows us to consider the issues of admission to universities from various angles.

Wishing you pleasant reading,

Guest editor Ilya Prakhov
(Ph.D, Senior Research Fellow, Center for Institutional Studies, HSE University)



National Research University Higher School of Economics

National Research University Higher School of Economics is the largest center of socio-economic studies and one of the top-ranked higher education institutions in Eastern Europe. The University efficiently carries out fundamental and applied research projects in such fields as computer science, management, sociology, political science, philosophy, international relations, mathematics, Oriental studies, and journalism, which all come together on grounds of basic principles of modern economics. HSE professors and researchers contribute to the elaboration of social and economic reforms in Russia as experts. The University transmits up-to-date economic knowledge to the government, business community and civil society through system analysis and complex interdisciplinary research. Higher School of Economics incorporates

97 research centers and 32 international laboratories, which are involved in fundamental and applied research. Higher education studies are one of the University's key priorities. According to recent QS World University Ranking, HSE is now among the top 150 universities in the subject of "Education". This research field consolidates intellectual efforts of several research groups, whose work fully complies highest world standards. Experts in economics, sociology, psychology and management from Russia and other countries work together on comparative projects. The main research spheres include: analysis of global and Russian higher education system development, transformation of the academic profession, effective contract in higher education, developing educational standards and HEI evaluation models, etc.

Center for Institutional Studies

The Center for Institutional Studies (CInSt) is one of HSE University's research centers. It focuses on fundamental and applied interdisciplinary research in the field of institutional analysis of the economics and sociology of science and higher education. CInSt is integrated into international higher education research networks and cooperates with foreign experts through joint comparative projects that cover the issues of higher education development and education policy. As part of our long-term cooperation with the Boston College Center for International Higher Education, CInSt has taken up the publication of the Russian version of the "International Higher Education" newsletter.

One of the main research areas of CInSt is the study of applicant and student strategies related to higher education and the link between education and the labour market. Our studies analyze the issues that applicants face during the admission process, the factors of student

success during their studies at universities, the issue of student employment and combining of study and work. We also study the expected and actual returns to education and labour market outcomes of university graduates depending on educational factors and strategies of school-to-work transition with particular attention to gender issues. Research on university graduates is conducted in collaboration with other research centers, including The Laboratory for Labour Market Studies at HSE University, Center for Research in Higher Education Policies of the University of Porto, and Ghent University.

The results of the research are published in leading educational journals, such as Higher Education, Higher Education Quarterly, Urban Education, International Journal of Educational Development, European Journal of Education, Journal of Education and Work, Journal of Higher and Further Education, Tertiary Education and Management and other outlets.

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Admission Systems in Post-Soviet Countries: a Shared Past, Common Problems, Different Solutions

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Introduction and the framework

Today, there is a wide range of university admission systems. The way admission rules are established, the way applicants are admitted to universities and student financial support impact the accessibility of higher education. Admission rules can be determined centrally by the responsible body or they can be established by universities independently, and the more independent the universities, the more autonomous the educational system. Autonomous education systems can be considered more effective as universities know their needs more precisely, however greater autonomy can negatively affect accessibility to higher education as admission requirements are not standardized, which complicates the procedure for applicants. Admission to universities can be based on the results of a national examination, or universities can establish their own specific requirements, and the level of university autonomy can also influence the way admission procedures are organized. Specific admission requirements can make it more complex and, consequently, increase the level of university selectivity. Selectivity is also determined by the demand for higher education. Highly selective educational systems may adversely affect the level of the accessibility of higher education as more complex admission procedures reduce opportunities for some students. Accessibility can also be influenced by the cost of education, which depends on the level of tuition fees and the availability of grants, student loans and other means of student support.

This article reviews of the admission systems and gives an overview of the situation in some post-Soviet countries (Kyrgyzstan, Kazakhstan, Tajikistan, Armenia, Azerbaijan and Ukraine). These countries have some common problems and some specific ones, and these cases show how the problems have been addressed. Some solutions are common and some instruments are used only in particular countries. 30 years after the USSR collapse almost all post-Soviet countries moved from the Soviet admission system and introduced unified examinations. The Soviet system provided for admission to universities on the basis of entrance tests conducted by universities. Most countries faced the same problems during the admission process: corruption, low access to higher education, especially for applicants from

outlying regions, lack of transparency and high subjectivity. The Soviet system did not give correct data about the quality of education. Facing these problems, almost all post-Soviet countries decided to introduce standardized exams at the beginning of the 2000s [1]. Unified exams decreased corruption through making the system more transparent and objective, and standardized tests increased the accessibility of higher education regardless of socio-economic status [2].

Overall, post-Soviet countries are characterized by a low level of institutional educational autonomy as the admission procedure, in most cases, is based on the results of standardized examinations which are developed by a specialized central body. For example, universities in Kyrgyzstan can only form a request, on the basis of which the orders of the Ministry of Education will be formulated and unified exams will be developed. Applicants in Tajikistan are selected on the basis of a unified exam which is also developed by a specialized central body. The situation in Armenia, Kazakhstan and Ukraine are similar, where standardized exams are used. In these countries university independence manifests itself only through the entrance tests which are developed by universities only for the admission to fine arts or sport programs.

As there are no specific requirements for applicants, it can be also considered that the educational systems in post-Soviet countries are not selective. In addition to the absence of extra requirements, the demand for higher education in these countries is low as evidenced by the relatively low competition rates for admission. The low competition in Kyrgyz higher education is a result of the many applicants who would like to enter Russian universities. Tajik students also often seek to get higher education in other post-Soviet countries—Russia, Belarus, Kazakhstan, Kyrgyzstan.

Considering the low level of autonomy and selectivity of the educational systems in post-Soviet countries and the existence of the state-funded places at universities, the level of accessibility to higher education in these countries is improving. Other instruments have also been introduced to increase access to higher education. In Kyrgyzstan, some cohorts of students compete exclusively among themselves during the admission process. They are students from Bishkek schools, from schools located in small towns and regional centers, rural schools and schools from mountainous areas. Azerbaijan is expanding the use of ICT in order to improve self-study opportunities and improve the level of accessibility to higher education.

There are positive aspects to post-Soviet educational systems. The introduction of a standardized admission exam has positively influenced the accessibility of higher education because of the increased transparency and the decreased impact of socio-economic status. The unified exams also curbed the potential for corruption.

However, these educational systems also have weaknesses. With the introduction of the unified exam in Tajikistan, for example, the market for tutoring services has also grown, which may lead to greater hurdles for students from the poorest families. Accessibility can be negatively influenced

by the lack of opportunities for financial support. Access to higher education can also decrease due to corruption. Despite the fact that unified exams aimed to solve the corruption problem, in Ukraine, for instance, this phenomenon appeared in other spheres such as the market for certificates attesting different privileges of applicants. Less autonomous systems may not reveal the real needs of educational institutions as educational policy which is developed centrally may be less effective. Low selectivity may also refer to the differentiation of the quality of higher education in some post-Soviet countries. There is a high level of academic mobility, many applicants want to get a foreign degree.

How the problems can be solved

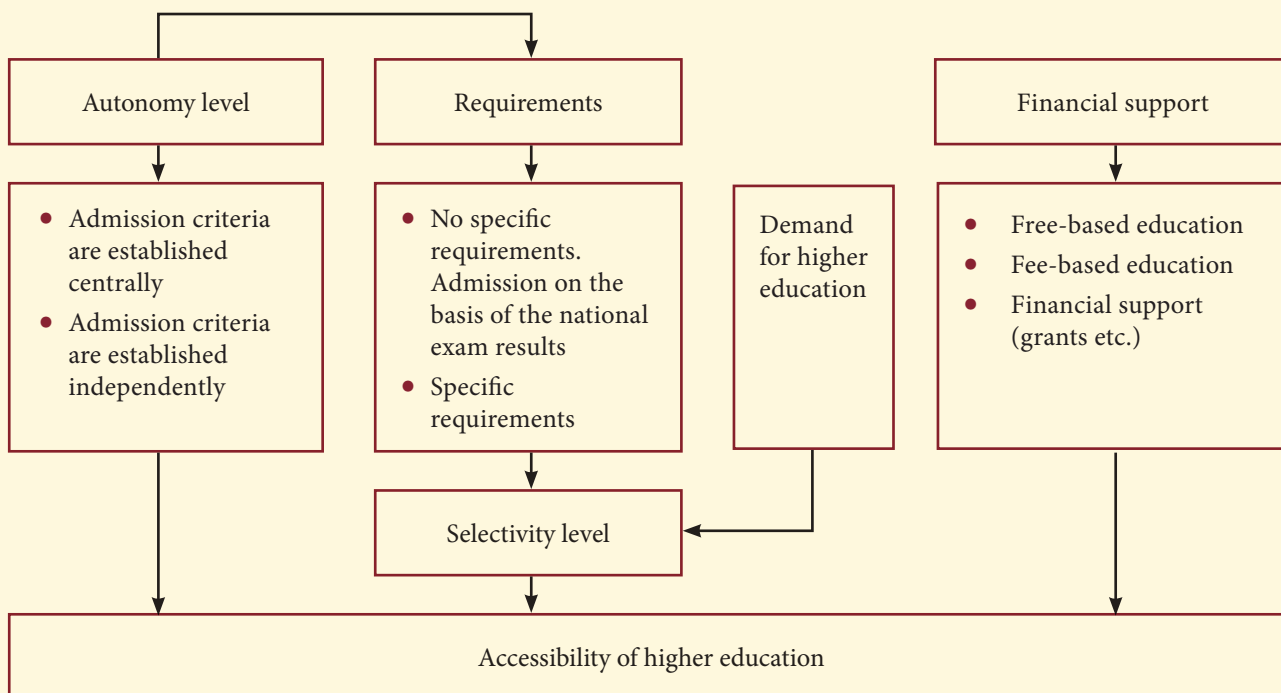
Such problems may be avoided using instruments implemented in other educational systems. For instance, the financial accessibility of higher education may be increased via financial support. German educational policy in general is aimed at increasing the accessibility of higher education: higher education is free of charge. Finland and Norway also introduced free higher education and implement various means of financial support. Increasing the effectiveness of educational policy can be done by increasing the autonomy of universities. US and UK universities are highly autonomous, developing their own selection criteria. Admission to HEIs in Finland, for example, is based

both on centrally developed exams and on the results of internal entrance tests conducted by universities. This may also lead to more selectivity but this parameter may be a 'signal' for the applicants and may indicate that higher education in these HEIs is of a high quality.

Conclusion

Some former Soviet countries, inheriting the Soviet university admission system, faced the same educational problems after the collapse of the USSR. These problems were largely solved by the introduction of unified entrance examinations, but each country also had its own individual characteristics. To reduce the level of corruption, educational autonomy was lowered in most post-Soviet countries, but the differentiation in the quality of higher education increased in the 1990s as some highly selective HEIs developed. In spite of a unified admission process, the purpose of which was to increase access to higher education, this problem has not been solved entirely as other problems still exist: the market for extra educational services reduces access to higher education, the lack of financial support for low income families, the significant differentiation in the quality of higher education. For these reasons high-quality higher education is still restricted despite a unified admission system and extra measures need to be implemented.

Table 1. How characteristics of the educational system influence the accessibility of higher education



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Admission to Higher Education in Georgia

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Higher education access in the Soviet period

During the Soviet period, entrance exams to higher education institutions (HEIs) were characterized by secrecy, nepotism, patronage, and favoritism among closed elite circles. Only those applicants who went to urban schools and had private tutors had a chance to prepare well and enter an HEI.

Entrance exams were oral and written, with each HEI having its own requirements for each subject and for the level of difficulty of the exams. This complex set of rules created difficulties for minorities, populations who lived in the regions, and for those without easy access to preparatory programs for the required subjects.

Especially in the 1980s and 1990s, the entrance exams became a kind of ‘arms race’ between secondary school curricula and entrance exam requirements, in which school curricula clearly ended up the loser. A widely-held public belief was that the changes in the requirements were made on purpose to encourage illegal ‘private tutoring’.

While entrance requirements became more stringent year after year, the school curricula began to lag behind the entrance requirements. It was not easy to adjust school curricula at the same rate as HEI entrance requirements changed.

Therefore, governmental inefficiency contributed to a significant increase in the inequality of access, deprived low-SES and minority groups of chances to enter an HEI, fostered corruption, hindered the production of human capital, and deterred regional economic growth.

Post-Soviet chaos

In the 1990s, after the collapse of the Soviet Union, bribery and money laundering were the most wide-spread forms of corruption in Georgia. These new types of corruption were influenced by the newly-opened regional market economy that was unregulated, chaotic and which contributed to a shadow economy that was reflected in the “hidden GDP”. Naturally, the chaotic economic situation had a spillover effect on education. Money-laundering through the opening of private HEIs and increasing bribery for enrollment became commonplace. Admission committee members at public universities also took bribes, although it was quite risky and less frequent than in private HEIs.

During this period, people who had capital, but who were unqualified to open academic institutions, started opening

private universities with the money that they had obtained through illegal activities. This practice was a prime example of cross-cutting corruption channeling, namely money-laundering via academia. No precise data on this fact is available due to the chaotic situation of that period and to the secrecy, riskiness, and sensitivity of the issue. The evidence is predominantly anecdotal.

Many students were lured by the relative ease of obtaining a degree from a private university because private universities did not have strict entrance requirements. Bribery in connection with entrance examinations flourished and there was total chaos in academia, although purchasing a degree from state universities was riskier and rarer.

Nobody controlled the curriculum, staff qualifications, student enrollment numbers, or admission criteria. A consequence of this situation was the mushrooming of “street-corner” universities. There was a university in every part of major cities. Because each university had its own entry requirements there was no uniformity, the quality of academia fell drastically, and equity of access was overshadowed by the general lack of affordability given the rising tuition fees.

Resource shortages in the early 2000s

The post-2000 period can be described as one of growing public awareness about the negative consequences and high costs associated with corrupt practices. An increasing number of international organizations and international academic exchange programs with high academic requirements made it necessary to raise academic standards, and to implement transparent assessment and selection systems. They also showed students and parents that the costs associated with bribe-giving could be cut by directing resources towards, for example, better preparation for entrance exams. Hence, the period of the late 1990s and early 2000s could be called “the struggle for scarce resources” in which students played a significant role in defending their rights to fair access to HEIs. They also demanded access to information and the use of objective assessment and selection criteria.

Present-day access: Unified National Entry Examinations

Standardized examinations increase the transparency and objectivity of assessment criteria. Being autonomous from educational institutions and making the requirements and criteria public, examination centers enhance equity.

After 2005, the entire admission process shifted to the Unified National Entry Examination Centre. The introduction of Unified National Entry Examinations (UNEEs) in 2005 engendered new interest and discussions regarding equitable access to higher education throughout the country. This triggered multiple reforms and changes in the education system: a reconsideration of the quality of the overall secondary school program, and standards and assessment of instruction at public schools. However, it also revealed a mismatch between school-level standards and the requirements of university entrance examinations.

UNEEs prompted a revision of secondary school programs. However, the revision was not conducted equally at all secondary schools. The majority of secondary school teachers were unaware of the exact requirements of the new exams. This necessitated teacher-training courses to help school teachers upgrade their skills and meet the new challenges. Unfortunately, these training courses lacked preparation, since there were not many professionals who were qualified to train those teachers.

The revision of national curricula, and the inclusion of low SES students in mainstream education have always been on the agenda. University applicants are selected on the basis of passing exam threshold set for each subject. The entrants with the highest accumulated points are enrolled in their first choice institutions, and usually in highly selective universities, while the entrants with fewer points get enrolled in less selective universities. State grants are allocated according to the accumulated points. Individual universities and departments offer grants to successful students with high GPAs. Certain universities also offer tuition-fee concessions and grants to low SES students.

An interesting point regarding higher education access and entry examinations is the fight against corruption and the maintenance of quality education. This has been a persistent theme not only in Georgia, but in most post-soviet countries, as well.

Reflections

The mismatch between the goals and responsibilities of the authorities to educate everyone, the scarcity of resources, and corrupt practices in higher education system are the primary challenges to tackle in the future. Important factors to be taken into consideration in terms of examination administering process are feasibility, costs and context issues that inevitably influence the efficiency and effectiveness of conducting examinations.

Through the introduction of standardized testing, the first step has been taken towards fighting corruption and transforming the education system effectively in a short span of time. The countries with successful testing mechanisms could provide a good example of how to jump-start education reforms for other countries facing similar problems.

A balance should be kept between the share of curriculum-based and aptitude-based questions in the tests. Disadvantaged groups, who have little opportunity to acquire curriculum-based knowledge for a number of reasons including teaching standards, should have a chance to reveal their skills through aptitude-based questions.

There are still issues to be addressed. These include the preparation of high school students to meet the requirements of the entrance examinations, the complex and often ambiguous requirements for students to qualify for study loans, and the lack of alignment between the national curricula and entry examination requirements in most of the post-Soviet countries.



The Estonian Mechanism of Admission to Universities and the Accessibility of Higher Education

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Introduction

The Estonian education system is largely decentralized. While local authorities are responsible for providing general education (from pre-primary to upper secondary), universities are independent and autonomous despite state ownership. There are 18 higher education institutions (HEIs) in Estonia; 7 of them are traditional universities and the rest are colleges of applied sciences. This distinction mainly has two implications—universities must have all three levels of tertiary education: bachelor's, master's, and doctoral studies, while colleges have the first two levels only; universities receive state financing for research after an assessment of their research quality by the Estonian Quality Agency, EKKA. There is only 1 private university and 4 private colleges in Estonia.

Tertiary attainment of 25–34 years old has reached 40%, which is comparable to the OECD average. However, universities are under pressure due to the declining population and the higher education reform implemented in 2013. To manage demographic and political changes the admission system has two tiers—state-funded education in curricula where the language of instruction is Estonian; and fee-paying curricula in English. The Estonian curricula admit students mainly based on external national exams, while programs in English admit students also based on a motivational letter, the GPA of the previous education level, entrance exams, and interviews.

Description of current admission practices

Before 1997, university admission was arranged by universities or faculties within universities. There was no central system and each faculty collected decentralized applications and formed a priority list of students. There were mainly two priority list principles: mean (course defined) grades from the high school graduation certificate, or the mean score of university-specific aptitude tests.

From 1997, all high school students in Estonia must take three national exams—Estonian language (or Estonian as a secondary language for Russian school students); Math-

ematics and English language. Starting from 2014, all three external exams are synchronized and the results are uploaded to the study admission information system (SAIS). Veskiöja [1] stated the underlying principles for SAIS as a central clearing-house that uses candidate stable deferred acceptance mechanism for matching students and curricula. However, SAIS was implemented simply as a central platform without taking this advice in 2005. The decentralized system preceding SAIS, implemented by universities, had all kinds of problems that decentralized markets can have, especially instability and inefficiency (e.g. 20–40% of candidates got multiple offers from universities) that made admission expensive and timely to manage, and, due to different admission periods, unstable. Decentralized admission caused state-owned universities to work out their

own administrative solutions such as limiting the within-institution preferences of students to two or three; or introducing admission thresholds.

From 2006, most HEIs started joining SAIS and later the international admission platform DreamApply, initiated in 2011 (see Table 1). Currently, DreamApply has more than 200 HEIs in more than 25 countries), but their admission systems remain institution-specific based on the limited number of preferences or other supply and demand management mechanisms. Application numbers in DreamApply have increased steadily reaching more than 10,000 in 2020, while approximately 2,000 students were accepted. Application numbers in SAIS have increased from 57,884 in 2016 to 82,189 in 2020. In total, about 14,000 students are admitted to HEIs every academic year.

Table 1. Summary of Estonian higher education admission system

Criterion	SAIS	DreamApply
Type of market	Decentralized	
Platform	Central data warehouse (but no central clearing-house)	
How platform is financed	A consortium of HEIs, the fee is based on the number of students	A consortium of HEIs (in Estonia), the fee is based on the number of applications
Restrictions of preferences	Usually 2 curricula per HEI	
Priorities and quotas	Priorities – national exam results, quotas per course, or admission thresholds	No quotas
Matching procedure	If not threshold-based then priority ranking	No matching procedure
Number of institutions	44 (14 HEIs)	9 (8 HEIs)

Notes: DreamApply is also used as a marketing tool to promote higher education in Estonia, it is also an information portal for visa, insurance, accommodation information.

In some countries, the application and admission process is centralized, which often means that the national exam solely determines university assignment, there are no limits on preferences for universities, a central warehouse collects both preferences and exam scores, and the matching mechanism is algorithmic using clearing-house principles (e.g. Turkey). Estonia, among many others, has a central warehouse for national exam scores and the administration of applications (SAIS), but admission criteria are institution-specific and no central matching mechanism is applied. The procedure is as follows:

1st step. High school graduates take three exams under strict central guidelines. National exams are prepared and evaluated by special committees arranged by the Education and Youth Board of the Ministry of Education and Research. All three exams are coded and anonymous; the oral parts of language exams are recorded. Exams are double graded. Results are uploaded to eesti.ee and SAIS by the 1st of June each year.

2nd step. SAIS matches the data from the national exams, the population registry, and the Education Information

System which contains information about curricula (and quotas, if any). Within SAIS, students can apply to many universities, however, within each university the number of applications is limited to two. The admission period ends in most universities by the end of June.

3rd step. For threshold-based admission, universities set the minimum national exam score and all applicants who meet the threshold are automatically accepted. For quota-based admission, universities offer places based on the national exam results only or can use a combination of national exams and institution-specific amplitude tests (or interviews, portfolios, etc.). Universities use priority ranking based on mean scores. Rankings are communicated in SAIS and published anonymously in the public section of SAIS. Various admission periods are applied by universities.

The Estonian decentralized admission system can be called a demand-management mechanism, and it has three main properties. First, limiting the number of institution-specific preferences to two is applied by many HEIs. This makes market participants use strategies and hide true preferences [2, 3]. More recently Hafalir et al. [4] show that lower

ability students benefit from decentralized and institution-specific arrangements.

Second, for threshold admission, where there are no quotas, a summative (or mean) national exam points-based threshold is applied. The candidate can choose the curriculum if the results of his/her national exams reach the threshold. In other words, the university expects only one preference per student. Theoretically, if a student submits true preferences the outcomes should be the same as the outcomes of the student's optimal stable mechanism. The flip-side is that the university has to carry the tuition cost for those candidates who fall outside of the government "order" for state-financed places, thus for universities wrongly predicting the thresholds can be a substantial financial burden.

Third, alternative decentralized admission mechanisms are based on institutional-specific admission tests or similar and use quotas. For quota-based curricula, the matching procedure is a serial dictatorship, where priority rankings are mean exam scores.

Additional issues: inequality and social mobility

Empirical research on social mobility in Estonia and how it is affected by decentralized admission mechanisms is limited. It can be argued that social mobility, which was surprisingly low in Soviet times [5] has increased due to increased supply and demand for higher education increased the number of graduates. It can also be argued that early tracking and selective admission to elite schools [6, 7] fosters students from advantaged backgrounds getting tuition-free places at universities, reproducing the elite. The last arguments can be valid independent of the algorithmic properties of the admission mechanism because inequalities are produced at lower levels of education. However, if parental education transmits student preferences or his/her ability to strategize, social mobility might be hampered by the mechanism itself.

Conclusion

The Estonian admission system is based on a central data warehouse, which matches national exam results and registered student data with the thresholds for curricula. In many cases, it avoids congestion (e.g. with thresholds, students know in minutes whether they are admitted to their preferred choice) and offers other advantages of a central platform. However, it does not apply central matching algorithms and it might have problems with stability and strategic behavior. If well-off students are better strategizers then the mechanism can aggravate social class-based inequalities.

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The University Admission System in Azerbaijan

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The State Commission for the Admission of Students (SSAC) was established in 1992 to conduct centralized university entrance exams. Azerbaijan became one of the first post-Soviet countries to introduce a unified system for selecting applicants.

The goals of introducing a unified exam system

The main goals of the unified university entrance exams were to increase the accessibility of higher education for young people from various social groups and increase the objectivity and transparency in conducting the exams. All countries in the post-Soviet space faced similar problems: a lack of transparency and subjectivity in the school leaving examinations and university entrance examinations, corruption and the flourishing of various “gray” admission schemes, and growing professional and public distrust of the education system. Economic and social problems worsened the situation for young people from remote regions, rural areas, and refugee families, all of whose chances of enrolling in good universities were much lower compared to other strata of society.

Centralized exams play an important role in the selection of university students and serve as a social boost, increasing the availability of quality education for capable and motivated applicants, regardless of their place of residence or the socio-economic status of their families. Since 1992, with the introduction of centralized university admission examinations in Azerbaijan, corruption and nepotism have been eradicated from the system [1].

Exam content and further improvements to the selection system

The rules for admission to universities, which are a normative legal document approved by the Cabinet of Ministers of Azerbaijan, are published by the State Examination Center (SEC) in the journal "Entrant" (the electronic version of the journal is posted on the website abiturient.az) and on the website dim.gov.az. The journal also publishes entrance examination programs and example examinations.

The development of test items is carried out in accordance with the general educational standards adopted by the Cabinet of Ministers, on the basis of programs and text-

books approved by the Ministry of Education (MoE). At the request of the MoE, the GEC monitors these textbooks.

For each examination subject there is a closed bank of assessment tasks, access to which is strictly controlled. The system is equipped with modern security, including permanent video registration.

Before 2009, final exams were held by high schools. Since 2009, graduation exams have been centralized by the MoE. During the examinations, there were problems with the organization and content of the exam, which in turn led to dissatisfaction among the population (including rallies in front of the MoE). As a result, according to the Decree of the President of Azerbaijan, since 2012, the holding of final school examinations was also transferred to the SSAC [2].

Final exams for the 11th grade are held in the following subjects: Native language (Azerbaijani, Russian or Georgian), Mathematics, and Foreign languages (English, German, French, Russian, Arabic or Persian). The duration of each exam is 3 hours, the maximum total score is 300 points.

In 2018, SSAC, together with the MoE, developed a new model of final and entrance examinations, according to which the results of final exams are taken into account when entering universities and the final high school exam is considered the first stage of the university entrance exam. In 2019, the first students studied according to the new curriculum and took the new model of the final and entrance exams.

Higher education specialties are divided into five groups (see Table 1). These take into account the state standards for these specialties and the minimum mandatory requirements for the content and level of preparation for a bachelor's degree and the knowledge, skills and abilities necessary to master these specialties.

As noted, the first stage of the entrance exam is in the language of instruction, mathematics and a foreign language. The examination subjects of the second stage are distinguished by specialty:

Table 1. Exam subjects by speciality

Group 1 - engineering and agricultural specialties; mathematics; physics; architecture	mathematics, chemistry, physics
Group 2 - economic, managerial, sociological specialties; geography; international relations; regional studies	mathematics, geography, history
Group 3 - humanities; pedagogy	in accordance with the language of the entrance exam - Azerbaijani or Russian, history, literature
Group 4 - medical and agricultural specialties; chemistry; biology; psychology	biology, chemistry, physics
Group 5 - specialties requiring special abilities (art, music and sports)	subjects for the special ability exam

The maximum score that applicants can score at the second stage is 400 points. The exam is 3 hours.

On the eve of the exam, in accordance with the test specifications for the corresponding exam and the test structure, using special software developed by GEC specialists, the required number of tasks from the bank is randomly selected. Experts and technical staff of the GEC, in an isolated room, conduct a closed examination of the question papers. Individual question papers are printed for each exam participant, indicating the place, time, exam and personal data of the examinee (about 500,000 question papers are printed every year). At the end of the examination, question papers remain with the examinees. After the examination, a live broadcast is organized from the GEC television center via Youtube and Facebook, where the content of the tasks is discussed and answers to public questions are given on the results of the exam. The correct answers to the exam tasks are also presented. Question papers and expert explanations of all the examination tasks are posted on the GEC website (dim.gov.az) within 24 hours after the exam. After the announcement of the results for groups of specialties, the choice of specialties for admission to universities is carried out (each applicant can choose up to 15 courses from different universities from the group of specialties for which he or she passed the entrance examination). The conditions of the competition are determined by the GEC in agreement with the MoE. The competition in specialties included in groups 1–4 is based on the ap-

plicant's combined score for the two stages of the entrance procedure. For specialties requiring special abilities (group 5), examinations are held on the basis of the final score scored by applicants on the special abilities examinations. The examination results for identifying special abilities, which are evaluated with the mark "passed", is conducted on the basis of the total score scored by applicants at the first stage of the entrance exam [3].

There is no special admission for certain social groups, however, places for applicants from families of internally displaced persons, from low-income families, refugees or orphans are state-funded.

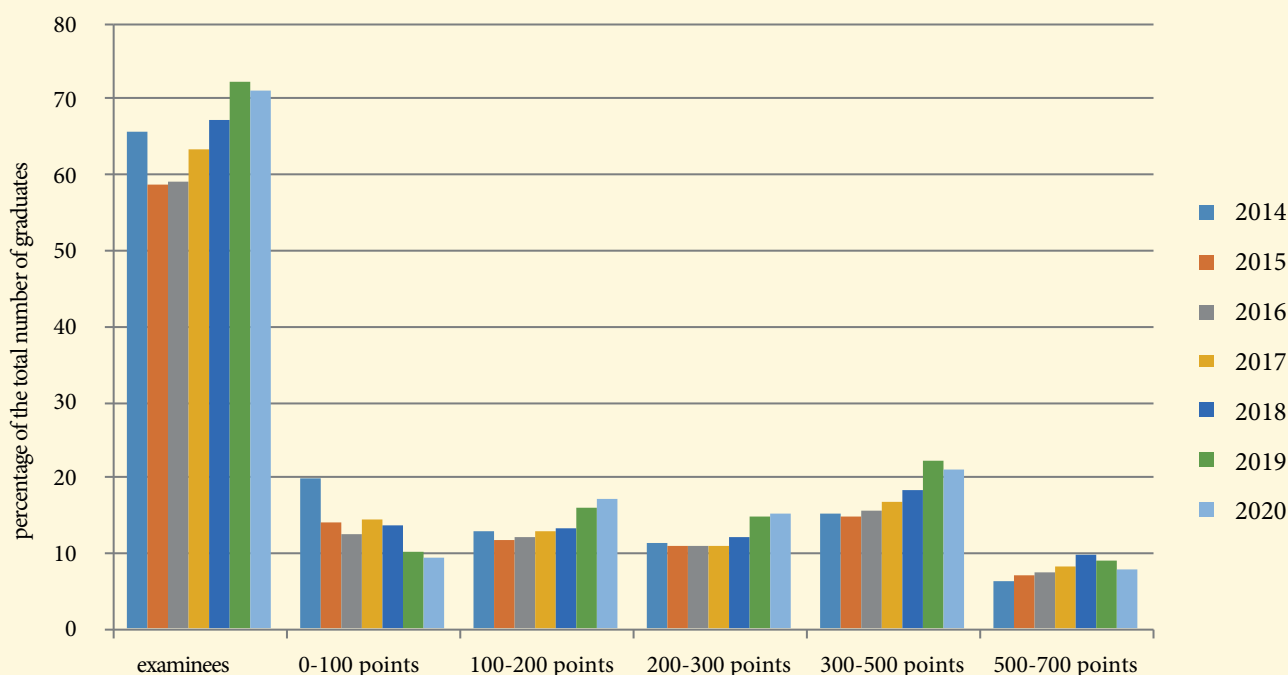
Education at the bachelor's level is state-funded or on a fee-paying basis.

In 2001, the president established a scholarship awarded annually to 102 students who have shown the best results in entrance examinations (since 2019 these are awarded based on the sum of the results of the two stages) to universities which motivated applicants to become the first in their group.

Statistical data

The number of the examinees and the passing scores in the specialties have regularly increased as a result of the increase in the level of the examinees (Figure 1).

Figure 1. A comparison of the distribution of applicants in the entrance exams of 2014–2020 (taking into account all graduates), in points



An analysis of the numbers of students who entered the first grade in 2005–2009 and their distribution by levels of education in subsequent years showed that out of 1,000 children, about 159 graduate after the 9th grade, 69 go to secondary specialized educational institutions on the basis of general (9-year) secondary education, 149 complete

their education after the 11th grade and do not apply for places in higher or secondary specialized educational institutions, 179 cannot pass competitive selection for university admission, 62 enter secondary specialized educational institutions on the basis of complete (11-year) secondary education and 301 enter higher educational institutions.

Social and public assessment of the GEC

For more than 20 years, the GEC has been surveying applicants who scored more than 600 points out of the 700 possible. The results of this survey are published in a special issue of the Entrant magazine and are taken into account to improve the admission procedures.

In 2019, the Center for Strategic Research (CSR) under the President of Azerbaijan studied the attitude of the population to the final and entrance examinations. The results were discussed in an open format with the public, experts, and GEC staff. The analytical report published by the CSR noted that about 90% of the respondents expressed confidence in the system of the examinations conducted by the GEC [4]. Previously, there were comments from the teaching community about the shortcomings of rote-learning, the widespread use of tutoring services, and the decline in the attention of students to subjects not included in the examination subjects. The GEC is constantly improving the technology and content of exams, introducing new types of test items, such as tasks with short answers and situational tasks for writing an essay on a given topic. In foreign languages, listening and comprehension are tested on the basis of audio materials, and assessment materials are being developed to test speaking. To reduce the role of tutors, the GEC provides a wide range of materials (collections of tests, methodological manuals, and GEC resources on the internet) that allow applicants to prepare for the exams independently.

Conclusion

In general, as a result of the unified testing system, society has more input into the assessment process, the announcement of results and enrollment in university. In addition, students from schools in remote regions have the opportunity to enroll in prestigious universities thanks to the provision of social and gender equality. The open socio-technical system has protection against external manipulation and is based on deterministic processes, which ensures the transparency of admission to universities and public confidence in the GEC.

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The Mechanism of Admission to Universities and the Accessibility of Higher Education in Kazakhstan

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The higher education system in Kazakhstan

The network of higher education institutions (HEI) in Kazakhstan consists of 131 universities (of which 11 have national status), 1 international (International Kazakh-Turkish University, Turkestan), one autonomous educational organization (Nazarbayev University, NU, Nur-Sultan), 30 state-owned, 18 corporatized (in the form of a joint-stock companies, part owned by the government), 56 private and 14 non-civil. Non-civilian universities include universities that are subordinate to law enforcement agencies and the Ministry of Defense, the Ministry of Internal Affairs, the Ministry of Emergency Situations, the General Prosecutor's Office, the National Security Committee [1, p.268]. The number of students at the beginning of the 2019–20 academic year was 604,345, of which 282,702 were male (46.8%) and 321,643 were female (53.2%). The number of students per 10,000 people in 2019 was 326.

Unified national testing and state educational grants

The rules for admission to universities are established by the Ministry of Education and Science (MES). These rules are binding for all universities, with the exception of NU, which is regulated by a separate law and has full autonomy to independently set their admission requirements.

All university applicants take the Unified National Test (UNT). A minimum threshold score is established, which makes it possible to enter a university, on a state-funded or fee-paying basis. For those wanting a state-funded place, a centralized competition is held. The government annually approves the number of places at bachelor's, master's and doctoral levels. The distribution of grants to universities is only carried out in some cases where quotas are established. Applicants who have won state-funded places based on the results of the competition independently choose their places of study, and, based on the results of that choice, universities are financed. When enrolling, applicants submit documents, including a certificate of general secondary education and UNT results.

Admission to creative specialties requires the passing of two creative exams at the university itself. Applicants on the centralized UNT take only three compulsory disciplines, while others take two more specialized examinations, the choice of which depends on the specialty. Applicants with certificates of secondary special education in an appropriate field do not participate in the UNT, but take entrance exams at universities. The content and form of such exams are determined by the universities themselves. Another feature is admission to pedagogical specialties. These applicants must pass an additional exam at the university. The content of such exams is determined by universities, and is aimed at determining the propensity for teaching.

Composition of students and dropouts, and alternative ways of becoming a university student

Since 2017, the UNT has been the entrance examination to universities, while in 2004–16 testing was conducted as a final exam after leaving school, combined with a university entrance exam. The main category of UNT participants are school graduates of the current year (130–135,000 people 2017–20). In 2017–18, 14–16% of applicants could not reach the established threshold score in the June UNT; in 2019–20, 27–29% could not. Such an increase was explained by the organizers as “the price for academic honesty”, since the rules for participants and members of local commissions were tightened. However, since 2019, the UNT can be taken four times a year: January, March, June-July and August, however, when participating in the competition for state-funded places, only the results of the main June UNT stream are taken into account, the results of the other UNT sessions are only eligible for fee-paying places.

In recent years, the number of students admitted to universities has increased: from 115,195 at the beginning of the 2015–16 academic year to 163,494 at the beginning of the 2019–20 academic year [2, section 5]. The total number of university students increased from 459,369 at the beginning of the 2015–16 academic year to 604,345 at the beginning of the 2019–20 academic year, with an increase in the number of school graduates from 124,382 to 135,513 over the same years. This can be explained by the fact that, first, a relatively low pass threshold was set (50 out of 140). Secondly, the UNT can be taken four times a year. In addition, universities are allowed to conditionally enroll applicants who did not reach the threshold score, with permission to retake the UNT in January the following year (i.e. during their university studies). Conditionally enrolled students who pass the exam continue their studies; unsuccessful students cannot.

At the beginning of the 2019–20 academic year, 60,654 students dropped out. The most common reasons were financial difficulties (12,360) and voluntary withdrawal (14,139). 5,504 students were expelled due to poor progress. A similar state of affairs was observed over the past five years. However, it should be noted that such a number of dropouts did not

lead to a decrease in the total number of students, since there were almost always more students enrolling than dropping out. At the beginning of the 2019–20 academic year, the largest number of students in five years were enrolled (101,482) of which 43,007 were transferred from other universities. In other years, the number of new students was 65–75,000, of which 22–34,000 transferred from other universities. The reason for this influx is a peculiarity of the rules for admission to universities: many applicants, after unsuccessful attempts to enter a university through the UNT, enter universities in neighboring countries: universities which enroll students with practically no exams. There are cases when such students do not travel to other countries, but study remotely from Kazakhstan. After the first semester or year of study, they transfer to Kazakhstani universities. It is these students who make up the majority of those listed as “transferred from other universities”. Proponents of such a scheme for admitting students argue that this does not contradict the principles of the Bologna Process, but many experts believe that this leads to a drop in the quality of higher education.

Official statistics do not take into account the “rate of return” indicator, i.e. what proportion of enrolled students in a given year were able to complete undergraduate studies. Only one university has published such statistics, which is one of the initiators of the formation of the League of Academic Integrity. But, unfortunately, this has not become a trend.

Student funding, tuition fees and the accessibility of higher education

Since the selection system provides for admission to both state-funded and fee-paying places, the availability of higher education is determined not only by how the selection to universities is arranged, but also by the mechanisms of financial support.

Tuition fees are indirectly regulated by the MES. Before 2020, the university fees should not be lower than the amount of the state grant, that is, the amount paid to universities for state-funded places. This amount was 635,000 tenge per year at national universities, and 342,000 tenge at other universities. Scholarships and student housing are included in these amounts. In 2020, educational grants were increased, at national universities the tuition to 1.1 million tenge, at other universities to 900,000 tenge. In addition, it was announced that fees for non-state-funded places should be at least one third of the state grant.

At the beginning of the 2019–20 academic year, out of the total number of students (604,345) 180,088 students (29.8%) had state-funded places and 424,257 students (70.2%) had fee-paying places. Fee payment came from various sources, mainly from students’ parents. In order to help students who pay for their studies at universities on their own, guaranteed educational loans were introduced in 2005. Such loans are available to all students, the loan amount is equal to the tuition fee. However, over all these years, only 7,275 students have used these loans (fincenter.kz). This is due to the fact that interest rates are high and the repayment terms are strict. The state educational sav-

ings system, introduced in 2013, encourages families to save up for the education of their children through special accounts. Participants of such programs received 5% interest from the state in addition to the bank's interest. As reported by the JSC "Financial Center" of the MES, there are currently 20,805 deposits in different banks (fincenter.kz).

Before 2018, there were 32–43,000 state funded places, in 2018 this was increased by 20,000. For the 2020–21 academic year, 53,771 undergraduate grants were allocated. The increase in the number of government grants was one of the measures to expand access to higher education.

Every year, when approving the number of state-funded places, quotas are established for persons with disabilities and those belonging to low-income groups of the population. A quota of 1% of the total number of places is set for orphans and children without parental care, the same quota for disabled people of groups 1 and 2: disabled children and those disabled since childhood. In addition, there is a quota for participants and invalids of the Great Patriotic War (0.5%), equivalent in terms of benefits and guarantees, and for persons of Kazakh nationality who are not citizens of Kazakhstan (4%). Another measure to expand access to higher education is a 30% quota for applicants entering specialties in demand in rural areas.

The gross enrollment ratio in higher education in 2019 was 66.98%, this indicator has grown significantly over the past five years (48.44% in 2015) [2, p. 232]. The share of university students in the total number of young people in the age group from 17 to 24 years in 2019 was 26.4% (author's calculations based on data from the National Bureau of Statistics). Another indicator characterizing the population in terms of educational level is the share of young people with higher education aged 15–28 in the total number of people of this age. As of the third quarter of 2020, this indicator was 30.3% [3]. All of these indicators are comparative with global indicators.

Conclusion

Reforms in admission to universities in Kazakhstan have solved the main problems of access to higher education. In general, higher education has become more accessible, in recent years. For example, after the introduction of the UNT, the share of students from rural regions increased, and the share of students from the regions at leading universities increased. Annual quotas improved the access of orphans, children with disabilities, etc.

However, as experts note, in state policy in this area, the country adheres to an extensive approach focused only on "increasing the total contingent with less effort" [4]. When distributing state grants, only academic achievements are taken into account, which does not correspond to the policy of equal opportunities, while a number of financial support mechanisms may not be available for individual families (high interest rates on educational loans, lack of opportunities to save). Therefore, the main essence of the recommendations of both domestic and OECD experts is a transition to the distribution of state educational grants

based on the socio-economic status of students [5]. The main problem for the implementation of such a transition is the lack of accurate data on low-income families that would allow informed decisions.

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The University Admission System in Armenia and the Consequences of the Introduction of Unified Exams

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The 1990s: the first attempt at centralized examinations

In 1991, the first reforms in education quality assessment were carried out in Armenia, which resulted in central-

ized external exams for admission to all state universities. Regardless of the university and the specialty, applicants came to the capital - Yerevan - and took entrance exams in all subjects in specially created examination centers. Applicants then provided their results to their chosen universities, and universities enrolled applicants for the first year based on these results. Although such changes significantly improved the admission system (centralized examinations, uniform rules, a single and transparent admission process, and independent reviewers), this system had a number of obvious shortcomings. Examinations in a single subject took place on different days therefore the examination papers were changed from day to day and the tasks were not equivalent. This meant there was no comparability of options or equality of conditions for examinees. One of the main problems was the subjectivity of evaluators' ratings. Two different specialists could score the same work in different ways, depending on their qualifications, interpretation, mood, tiredness, and even on the applicant's handwriting. These drawbacks hindered the comparability of scores for different applicants who took the exam in the same subject. There was also the problem of the accessibility of higher education, associated with the fact that some applicants faced significant transaction costs in traveling to Yerevan to take the exams.

The Unified State Examination as the main mechanism for admission to universities

The second wave of reforms led to the creation in 2005 of the state non-profit organization "Assessment and Testing Center", which, in two years, prepared, organized and carried out the first exam in the new format (Armenian language and literature), and then in all school subjects. Since 2007, the unified state exam (USE) has been used for admission to university in Armenia. Since then, USE has been held throughout the country and not only in the capital.

USE combines certification and selection goals. USE results are confirmation of graduation from school and the basis for admission to universities. In addition to the USE results, in some cases (e.g. fine arts and sports) additional exams are required.

USE consists of two parts. Part A is used to form the final school graduation score, and the the total score (Part A + Part B) forms the competitive grade in this subject, which is used in the selection of applicants for university. The tests use 3 types of tasks: (1) multiple choice, (2) short answers and (3) true/false questions. The verification of the tests is carried out automatically by scanning the answer sheets. A raw 80-point scale is used, which is then converted to a 20-point scale.

In February each year, applicants decide which subjects they are going to take for USE. For all other graduation subjects, applicants take state final exams. Based on this choice, the applicant gets the right to participate in the admissions process. An applicant has the right to participate in the competition for 2 state-funded places and 8

fee-paying places at different universities and in different specializations.

USE is held in examination centers throughout Armenia. Examination centers are selected from schools and universities, with appropriate premises and conditions. On the day of the exam, the Examination Center team receives examination materials, and the exam begins at 9:30. The exam lasts 2.5–3 hours depending on the subject. At the end of the exam, applicants submit test booklets and answer sheets. Operators make photocopies of answer sheets and give them to the applicants before they leave the examination room.

The final result, on the 20-point scale, is entered into the database. Several days are given for this procedure, but the applicant himself has the opportunity to determine his score on the day of the exam. 2 hours after the end of the exam in all centers, the correct answers are published on the website of the "Assessment and Testing Center" and the applicant, having a photocopy of his or her answer sheet can check the answers and determine his or her score. After the official announcement of the results, the applicant has the right to appeal. Since the check is carried out automatically, there may be cases where the scanner does not recognize some answers. In all such cases, the photocopy is compared with the original form and a final decision is made.

Advantages of USE

The USE system, in our opinion, has obvious advantages. First, USE combines final school graduation exams and university entrance exams. All applicants take the exam for a subject on the same day and the exam is the same. The rule is "one subject - one exam - one day".

Secondly, USE reduces the transaction costs for applicants, as examination centers are now located throughout the country. As mentioned, previously all applicants, at their own expense, travelled to Yerevan and had to stay there throughout the exam period.

Thirdly, USE has a number of advantages associated with the exam administration. Tests are checked automatically, so the human factor and subjectivity are excluded when checking. Anonymity is maintained during the scanning process. Applicants can calculate their score 2–3 hours after the end of the exam, by comparing their photocopy of their answer sheet with the published answers. Previously, applicants were forced to wait for a week for the official results. In fact, USE does not allow appeals, since the format of the exam removes any subjectivity. USE ensures the transparency of the admission process to university, applicants are treated more equally, and parents have the opportunity to observe the progress of exams in special rooms.

Conclusion

As a result of USE, admission to university has become fairer and more qualitative, the new system has significantly reduced stress and expenses for applicants and their parents during the examinations and increased the level of confidence in the results.

As the USE system, to one degree or another, affects the quality of education, it has been suggested that the system is not wholly positive. In particular, as a result of the publication of open task banks, applicants try to mechanically memorize the answers to the tasks, and in high school too much attention is paid to rote learning, which can lead to a loss of cognitive skills. However, this has not been substantiated by in-depth research and has not led to significant dissatisfaction with the USE system. This does not mean, however, that the system should not react to any revealed shortcomings.

In general, measurement accuracy has significantly increased, the testing method has significantly increased the quality of assessment, giving them a higher degree of reliability and validity.

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The Unified State Examination: The Russian Experience in Standardizing the Admission System

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Currently, the main mechanism of admission to higher education in Russia is the Unified State Examination (USE), which represents a set of standardized exams on different subjects, taken into account during the transition from high school to university. The history of USE began in 2001, when it was piloted in 5 Russian regions. Every year more and more regions joined the experiment, and the number of subjects was gradually increased from 8 to 14. In 2009, USE became mandatory throughout Russia.

Before the start of the pandemic, all high school graduates sat USE, regardless of their educational choices for higher education. Graduates who did not want to apply to university only had to take the Russian and Mathematics exams, while university entrants additionally took those subjects that were required by specific universities and educational programs. University applicants apply for a specific program, but they can send applications to different programs within the same university. In 2020 and 2021, because of the pandemic, USE became mandatory only for university applicants.

At the end of grade 11 (the last year of high school), school students sit a set of exams, scoring up to 100 points for

each discipline. Exams are usually take place within schools. The Federal Service for Supervision in Education and Science (Rosobrnadzor) administers USE. Having received their USE scores, university applicants send their results to universities. The list of required subjects varies depending on the educational program and usually consists of 3–5 disciplines. Russian is a compulsory subject in the application program, while Mathematics is only obligatory as a graduate exam and is not required for certain bachelor programs (for example, arts and humanities). Each student can apply to several universities and for several programs within a particular university. Higher education institutions (HEIs) rank applicants based on their USE scores and admit students who have the highest achievements for the limited number of state-funded places, i.e. such applicants are exempt from tuition fees. A limited number of applicants who did not receive the required USE score are given the opportunity to be enrolled into the chosen educational program on a fee-paying basis. Note that in selective universities, there is a significant competition even for fee-paying places.

The Soviet system of admission to HEIs

As in many post-Soviet countries, which experienced a transition to standardized examination procedures in the 1990–2000s, the introduction of USE in Russia was justified by the shortcomings of the previous system, which were aggravated in the 1990s by the negative processes taking place in the economy in general, and in the education system in particular. How did the Soviet system work?

In the Soviet Union, higher education was free and the number of positions in HEIs was limited. The system of admission to universities consisted of two stages. First, high school graduates took school graduation exams and received a certificate of (full) secondary education, which was a requirement for university entrance. Applicants then applied to a specific university and sat entry exams for a specific program. Each HEI developed its own examination format in accordance with the high school curriculum and set an examination timetable. Thus, the opportunities for admission to several universities simultaneously in order to distribute the risk of not being admitted were extremely limited.

Economic recession and the need for reforms in education

With the collapse of the Soviet Union and the transition to a market economy, Russian higher education faced a number of problems. First, the prestige of the academic profession fell dramatically: poor university funding and extremely low faculty salaries led to the transformation of the educational system, while the ‘Soviet legacy’ in the form of university entry exams was preserved. Some professors moved abroad (the brain drain), some teachers left the higher education system altogether and got jobs in the developing private sector. Those who remained in academia were forced to look for new sources of income.

In the early 1990s, private universities were established in Russia. They offered fee paying educational programs and a state diploma after graduation. As a rule, professors of state HEIs worked in non-state universities on a part-time basis. Fee paying places also appeared in state universities, which also stimulated an additional inflow of funds. Unfortunately, the lack of funding seriously affected the admission system, creating inequalities and opacity.

Admissions to HEIs was still a two-tier system, and universities had the autonomy to set their entrance examinations. Formally, the examination program corresponded to the school curriculum approved by the Ministry of Education, however, universities often resorted to non-curriculum-based questions in the examinations. The discrepancy between what was taught in school and what was required by universities stimulated the development of pre-entry coaching. First, universities offered pre-entry courses that were specific for the university's entry exams. In other words, the students who attended such courses gained knowledge and skills which were not available to other applicants. Sometimes course graduates were directly enrolled in the first year of the HEI (graduate exams in the pre-entry courses were recognized as entrance examinations) or received other benefits, such as discounts and extra-attempts to pass the entrance exam. Second, university faculty offered paid private tutoring services. In fact, the professors talked about the features of the entrance exams, and then they often turned out to be members of the admission committee and could be more loyal to 'their' students. Thus, additional preparation increased the chances of successful admission, reducing the accessibility of higher education for those who did not have the geographical or financial opportunity to resort to such classes. The lack of resources for pre-entry coaching was the one of the main problems creating inequalities in education. In addition, paying for pre-entry courses and tutors could be seen as a form of bribery, which, together with the general lack of transparency in the examination and admission processes, created favorable conditions for corruption. Corruption, the decline in the accessibility of higher education and the lack of transparency in assessment were the main reasons for the reform of the admission system.

USE today and new challenges

Of course, USE solved a number of problems caused by economic shocks. First, the unification of the program equalizes the chances for applicants, regardless of their proximity to a particular HEI. The exam program matches the school curriculum more precisely, and applicants prepare within their high schools and take practice and actual exams there. Second, preparatory literature and sample exam problem sets are available, reducing the need for preparatory courses and tutoring. Third, the assessment system is more objective and broader than before, and the USE format allows a comparison of the educational achievements of students, schools and regions. Fourth, students can apply to several universities at once, which reduces the risk of non-admission. Finally, the selection procedures became more

transparent, and universities (with rare exceptions) were deprived of the right to conduct their own examinations, which reduced the level of corruption in universities.

However, despite the standardization of the admission process, there are ongoing debates on the problems that were not resolved or arose with the introduction of USE. For example, pre-entry courses and classes with tutors are still popular, but now the preparation is being conducted for USE. Unfortunately, not all schools can properly prepare students for successfully passing the exam, which makes additional preparation necessary, and in this situation, children from more affluent families receive a number of advantages. This issue is especially acute when entering the most selective universities. Second, the wording of the exam questions may be incorrect. Third, the USE format differs from the standard tests and classwork that students carry out during their school lessons, so they have to spend additional time and effort on mastering the USE requirements at the expense of a deeper study of the school curriculum. Finally, USE solved the problem of corruption in universities, but now there is corruption in schools, since USE is taken there.

The Russian university admission system has taken into account a number of mistakes from the past, but it now faces new challenges that must be addressed. The main directions of the policy should be related to increasing the accessibility of higher education for certain social groups and the elimination of dishonest practices during USE.

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Olympiads: Attracting Top Talent in a Non-Standard Way

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Matching students with universities in Russia occurs via a complicated procedure. Most students are admitted based on the Unified State Exam (USE)—a standardized government-organized test, while the most selective universities enroll the winners of the Olympiads—intellectual competitions for high-schoolers.

Olympiads have a long history in Russia—enthusiasts organized the first mathematical competitions in the 1960s. Today, there are hundreds of Olympiads in which high school students compete in all school subjects and in non-curriculum fields, such as robotics, critical thinking, creative writing, and business. Some Olympiad awards (in most cases, at the university's discretion) open the doors to a bachelor's program bypassing all examinations; others exempt students from certain subjects in USE.

Olympiads as a way to select applicants

Why is USE not enough? It tests the mastery of the school curriculum and offers similar tasks to students over time. If the USE tasks change format or begin to differ from the usual content, a public outcry usually results. Top USE performers are often those who have mastered the standard curriculum and passed predictably arranged exams in three or four subjects.

But highly selective universities want to attract those who are significantly ahead of their peers in one or two disciplines. This may be due to their ability, persistence, or passion (often, all of them). It is difficult to identify them based on USE results. Olympiads identify those highest of achievers and effectively complement the USE enrollment.

The best universities admit a significant share of students through Olympiads: for example, in 2020, 42% of all state-funded places at HSE University's Moscow campus were taken by applicants who entered through Olympiads. This figure is higher than in any other major university in the country. HSE University also conducts Olympiads itself.

Event requirements

Not any intellectual competition is a means of admitting students. The Ministry of Science and Higher Education has requirements for events that qualify as official Olympiads and give the winners special rights in terms of admission. Among other things, the competition must have at least two stages, with the final stage being held in person (the qualifying stages can be online, which makes participation more accessible). Before being included in the official list, an Olympiad must run without giving any admission privileges to its winners for three years. It also must have branches in several regions (for the in-person stages) and attract a certain number of contestants representing many areas. In other words, only well-established competitions are included in the Ministry's list. Participation is always free of charge.

The main organizational risk of holding the qualifying stage online stage is cheating, which is difficult to track. Some participants, striving to get maximum scores and pass to the next stage at any cost, can use forbidden materials when solving tasks, consult with each other or solve tasks with a tutor's help. This phenomenon, unfortunately, is contagious. If there are many such participants, other participants reason: I want to pass the test lawfully, but I know that many cheat, so if I do not cheat, I have no chance of winning.

There is no perfect solution to this problem. Most competition organizers use various techniques to prevent or minimize cheating, including randomized task generation, online proctoring, and qualification rules. The final stage (which gives admission benefits) is always in person (or, in exceptional cases like COVID-19 pandemic, with online proctoring).

Olympiads and admission rules

According to the law, medalists of the All-Russian School Olympiad (the only one organized by the state) have the right to enter any bachelor's degree program in accordance with the subject of the Olympiad without any entrance examinations.

The distribution of winners among universities they want to enroll in is not uniform. The leading, highly selective universities face the greatest demand from Olympiad winners. In the most sought-after programs, places for applicants with the USE results sometimes do not remain at all. For example, in 2020, in the "Applied Mathematics and Computer Science" program at HSE, the Olympiad diploma holders eligible for enrollment took 146 out of 126 available state-funded places. This is not a typo, as they all have the right for free admission, the university had to pay for the education of 20 of them.

This was done without regret. The All-Russian Olympiad winners consistently perform well in their undergraduate studies, so HSE is ready to pay for their sake. We always invite a few students with the top USE results free of charge even in cases when there are no state-funded places available.

For other Olympiads, the universities can flexibly adjust the benefits. It can be either admission without entrance examinations, or with a USE exemption for the Olympiad subject, or nothing.

Problems of the Olympiad system. New intellectual competitions

Even though it is not easy for a contest to be recognized by the Ministry, there is a concern that there are too many Olympiads. Some of them have become standardized and are used primarily (or only) as entrance exams for the universities organizing them. However, the initial idea was to create an alternative system to standardized exams. As mentioned, some university programs admit almost only Olympiads winners, so an aspiring high schooler has to participate in everything (even if he or she does not like the competition or finds it uninteresting).

Some Olympiads, unfortunately, are inflexible and have not changed in years or even decades, beginning to repeat themselves. While this adds predictability, it results in a failure to solve the problem mentioned above: selecting talented, creative participants who can think outside the box. Many Olympiads offer participants pen-and-paper tasks of the same style repeatedly, so it is clear how to prepare for them. Those students who manage to find an experienced (and often very expensive) tutor have an advantage.

I think in the future Olympiads will change. Memorizing formulas, solving problems on paper, and writing texts according to well-known templates are useful but not critical skills of a modern student entering a leading university. Our aim for the next few years is to launch new competitions that will focus on soft skills in addition to hard ones.

An example is "In Your Own Words" started by HSE and partner universities in 2021. This is an Olympiad which will begin to provide benefits for admission in a few years, but also an exciting experience for all the participants. Everyone interested in creating texts has the chance to express themselves on topics they are interested in—sports or art, science or international affairs, etc. This is not only about writing but also the design and presentation of your text (e.g., as a blog post), defending your ideas, critically assessing others', teamwork, and working with mentors.

Although new projects like this one cannot immediately give preferences for admission, they are still valuable: they attract participants with something else—interesting tasks, valuable prizes, and unusual extra activities. With Olympiads giving significant advantages for admission, the stakes are always high. HSE tries to maintain a delicate balance between strict control over compliance with the rules and creating an intellectually festival atmosphere. We keep in mind the original mission of the Olympiad movement—the popularization of scientific knowledge, attracting talented students into a like-minded community. Hence, we regularly test new formats, guided primarily by contestants' interests.



The Accessibility of Higher Education in Russia: Sources and Mechanisms of Inequality

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This article analyzes the sources of the emergence and spread of the inequality of access to higher education under the Unified State Examination (USE) in Russia. We consider the results of recent studies related to empirical assessments of the factors and mechanisms which limit accessibility of higher education.

In terms of the mass character of higher education in Russia, USE is considered by many researchers as a tool that replaced the 'soviet style' entrance examinations in universities and aimed to increase the accessibility of higher education. Since USE represents a set of the standardized exams and assumes the same entry requirements, examination format and procedures, assessment and grading systems, it is logical to conclude that ranking university applicants on the basis of USE scores implies equality in educational opportunities. Some cohorts of students, how-

ever, may benefit from USE, being in a more favorable situation, while other enrollees may still face barriers to higher education.

The accessibility of higher education and the mechanisms of educational inequality

There are many definitions of the accessibility of education. One of them is associated with the possibility of obtaining the level of education that matches student abilities, regardless of his/her SES or other factors, which are not directly related to individual potential. In the ideal case, student abilities should determine final USE scores, which contribute to the efficient choice of university. However, a number of recent studies of the accessibility of higher education in Russia have identified a number of inequality mechanisms in university admission: (1) Income inequality and differences in educational strategies (for example, pre-entry coaching); (2) Family SES and parental involvement, which determine the academic performance and university choice; (3) The determinants of the educational mobility of applicants, including inequality in access to higher education in a regional context; (4) Matching between the level of applicants and the level of university selectivity ('quality' of higher education).

The role of family

Family characteristics, such as parental education and income, social and cultural capital determine educational trajectories, the sequence of educational choices, investment in education, etc. One of the characteristics of a household is income, which can also influence USE results and is an important source in determining educational strategies and their effectiveness. Income variation, through the differences in educational choices of pre-entry coaching, creates unequal opportunities of university choice, due to the variation in USE scores. It is an important factor in determining student achievement and the effectiveness of pre-entry coaching: parental investment in extra-courses has a significant positive effect on USE results only for applicants from the richest families. The results are consistent with different data and different empirical strategies of estimation: applicants who attend pre-entry classes, on average, receive 3 more points (out of 100) than students who did not use pre-entry coaching mechanisms.

Family characteristics such as parental education and the level of cultural and social capital also play an important role. These factors can determine the patterns of parental involvement in the educational process. Parental involvement is associated with USE scores and the likelihood of successful admission to a university. Parents who help with homework too actively can negatively affect student achievement and the chances of higher education, while providing the literature and hiring tutors have positive effects. In general, a rational approach to parental participation helps to improve educational achievement and increase the accessibility of higher education for such students. On the other hand, low levels of parental education

and cultural capital can correspond to low levels of parental involvement and become another barrier of access to higher education.

Student mobility and regional differences

Another mechanism of unequal access to higher education is educational mobility. Since high school students sit the USE in different regions, they are influenced by regional variations in socio-economic and educational development. These factors can influence a student's decision to move to another region to enroll in higher education. Together with family characteristics, inequalities in regional development can either stimulate or limit educational mobility. In the latter case, educational immobility can be considered as one of the mechanisms limiting access to higher education. Thus, a positive relationship was established between USE scores and the likelihood of moving. In this case, the simplification of the university admission procedure contributes to educational mobility, but even bright students face a number of social and financial barriers. In addition, the statistically significant influence of regional macroeconomic and educational characteristics should be taken into account. These are barriers that are indirectly related to academic performance and limit educational mobility and, as a result, the accessibility of higher education.

School and family can influence the educational strategies of youth, admission success and the accessibility of higher education directly and indirectly, through USE scores. This relationship is especially clearly manifested in the regional context, for students from small towns and rural areas. It was found that residents of Moscow are most likely to enter a university, since they face the fewest barriers to entry. The problem of the accessibility of higher education is more acute for residents of large cities or regional centers: the likelihood of admission to university is limited by a large number of factors (cognitive abilities, socio-cultural capital and financial situation of the family, specificities of school education). Residents of small towns and rural areas are least likely to enter university, as this cohort faces the largest set of barriers, and for young women gender inequality. Despite the unification of admission rules, there are still significant barriers that can limit access to higher education for certain cohorts of students from the regions.

Matching and selectivity

Family SES and the regional features described above can influence the choice of university in the context of its selectivity, i.e. in terms of the quality of education. The degree of university selectivity where the student enrolls is determined by his/her individual USE scores and by the characteristics of their family and school, features of pre-entry coaching and regional socio-economic development. In other words, when entering selective universities, applicants may encounter barriers that are only indirectly related to their academic performance. Incomplete matching between the applicants' abilities and the quality of the university was found even for applicants from Moscow, i.e. for students

facing the minimal transaction costs associated with admission. It has also been demonstrated that inequality in access to higher education is embedded in school, long before the formal start of the admission process.

We have identified a number of sources of inequality in access to higher education (family, school, regional and educational) and mechanisms for its spread in Russia (additional training, parental involvement, educational mobility, inefficient matching between students and universities). Despite the standardized entrance exam, these issues, distorting educational choices, may affect the accessibility of education.



The Mechanisms of Admission to Higher Education Institutions and the Accessibility of Higher Education under the New National College Entrance Examination in China

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The National College Entrance Examination, or "Gaokao", is a selective examination held in the People's Republic of China for qualified high school graduates or examinees with an equivalent educational level for entrance to higher education institutions (HEI). As a nation-wide examination, Gaokao is centrally organized by the Ministry of Education (MOE). The examination papers are set by the National Examination Center under the MOE, or by the provincial education examination authorities where independent provisions are adopted. Gaokao is held from June 7 to June 10 every year. Any provincial or municipal exams are held in the same time period with the national exams of the same subjects, if any. Regular HEI admit the best examinees according to their Gaokao results with consideration of their ethical, physical and intelligence performance based on their enrollment plans made in advance. Gaokao has a history of more than 40 years since it was resumed

in 1977. In 1977, 5.7 million examinees participated in the exam while in 2020 the number of examinees reached 10.7 million. The gross enrollment rate of HEI increased from 1.5% in 1978 to 51.6% in 2019, which indicates that higher education has been popularized in China.

Since 2014, China has launched a new round of reforms in Gaokao. In the same year, Shanghai and Zhejiang Province carried out pilot reforms for Gaokao. In 2017, Beijing, Tianjin, Shandong Province and Hainan Province also piloted the reforms, followed by other eight provinces including Jiangsu, Hebei, Hubei in 2019. Although the MOE does not stipulate when each province/municipality should adopt the reformed Gaokao, in the past two to three years, all the local authorities have been promoting the reform based on their own situations. The Gaokao reform is not only a change in the mode of examination and admission; more important is the reform of the teaching and talent cultivation model adopted by senior high schools and HEI. Compared with the traditional university entrance examination and enrollment system, the new system places a higher value on the personal development of students, respecting their individual differences, and adapting to the requirements of HEI for diversified development.

The number of elective subjects in Gaokao increased

The key difference in the new Gaokao system is that the division between liberal arts and sciences, which lasted for 40 years, has fundamentally changed. In the traditional system, there were two major categories: liberal arts and sciences. The compulsory subjects for liberal art students were Mathematics, Chinese, English, Politics, History, and Geography; and for science students, Mathematics, Chinese, English, Physics, Chemistry, and Biology. While in the new system, there are 3 compulsory subjects for each examinee, for liberal art students and science students, namely Mathematics, Chinese and English; and six optional subjects, namely History, Geography, Politics, Physics, Biology and Chemistry, are available for examinees to choose freely according to the local regulations. In Beijing, Shanghai and three other provinces, a "3 out of 6" mode is adopted, where each examinee can choose three subjects from the 6 above based on their own interests. In Zhejiang Province "3 out of 7" is adopted, with the 7th being Information Technology. Jiangsu Province has a "3+1+2" mode, that is, besides the three compulsory subjects, each examinee needs to choose Physics or History, and other two subjects.

The subjects selected should match the majors that the examinees are applying for

Each HEI major has specific requirements for the examination subjects. Take Peking University for example: any examinee applying for a Physics, Mathematics, Engineering Mechanics or Psychology major shall choose Physics as one of their optional Gaokao subjects; those applying for a Geology, Chemistry, Environmental Science and Engineering, Biology or Medicine majors choose Physics

or Chemistry as one of their optional subjects; examinees for liberal arts majors such as Philosophy, Literature, Economics, etc. are not subject to such restrictions.

A more diversified mode is used in the admission mechanism of HEI

The new Gaokao is similar to the old one in that colleges and universities still take the results in Gaokao as the criteria for admission. Nonetheless, many provinces and HEI are exploring a more diversified, comprehensive evaluation and admission system, to evaluate the examinees more thoroughly. For example, a pilot "Three-in-One" comprehensive evaluation mode is being adopted in Zhejiang Province. Here "three" refers to the Gaokao results, the results of the academic tests in senior high school, and the results of an HEI-level comprehensive quality evaluation. The three results have different weights in the overall score, based on which HEI admit the best examinees. Each HEI determines the specific weights to be adopted, on the condition that the Gaokao result accounts for no less than 60%. In 2020, 36 top universities in China launched the "Pilot Reform Program of Enrollment for Basic Disciplines", including Peking University, Tsinghua University, and Beijing Normal University. Aiming to facilitate the reinforcement of major national strategies, the program selects and cultivates young students with special interests and talents in certain basic academic disciplines such as Mathematics, Physics, Chemistry, Biology, Literature, History, Philosophy, to foster talent for key strategic national fields. HEI enroll students based on the overall score obtained by integrating the Gaokao results and the application package, among which the Gaokao results account for 85% of the overall score.

Extra points for Gaokao results are given to special groups

The extra points for Gaokao results is a compensatory policy devised to benefit the groups making special social contributions and to create more opportunities for students with disadvantaged backgrounds to receive higher education. The policy mainly applies to children of martyrs, returned overseas Chinese, children of overseas Chinese and returned overseas Chinese; examinees from Taiwan Province, self-employed veterans, and examinees from border areas, mountainous areas, pastoral areas, and ethnic minorities. Different provinces and cities have different rules and regulations under the policy. In Beijing, where the Gaokao score is out of 750 points, children of martyrs receive an extra 20 points when their personal files are transferred to HEI; returned overseas Chinese, children of overseas Chinese and returned overseas Chinese, examinees from Taiwan Province and self-employed veterans an extra 10 points; examinees who transferred from border areas, mountainous areas, pastoral areas, and ethnic minority settlement areas to study in Beijing during their senior high school period an extra 5 points. These examinees provide relevant documents to HEI to certify their eligibility for extra points.



Poland's Higher Education Admission Process after the Political Transformation in 1989

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Since 1989, higher education in Poland has experienced many dramatic twists and turns in regards to student enrollment. In order to simplify our analysis, the period (1989–2020) can be divided into two significantly different phases: system expansion (1989–2005) and system contraction (2005–2020). The first phase was marked by spontaneous and unrestrained growth. The number of students increased fivefold from 421,000 to 1.95 million and the number of higher education institutions (HEI) increased from 112 to 445. The expansion phase was largely driven by the ‘internal’ and ‘external’ privatization of higher education [1] and a total lack of control over the admission process, but this trend reversed and since 2005 student numbers have declined to 1.2 million.

These changes were possible due to the specific structure of higher education in Poland which embraces both state-funded places (684,313) and fee-paying places (519,685). In general, students of public universities who attend full-time programs do not pay tuition fees, while part-time students in public universities and those studying in the private sector (full-time and part-time) pay tuition fees. The non-fee programs tend to be more attractive, more prestigious and less accessible for students and at least some of them have a selection process while the others (with some minor exceptions) admit all applying candidates.

The number of admissions and criteria

Polish HEI enjoy broad organizational autonomy which covers the authority to organize and conduct the admission process. The consequence of such a laissez-faire approach means that each institution develops its own rules and regulations in respect to admission which includes setting the number of students admitted to each program and the admission criteria. Article 70 of the Law of Higher Education and Science guarantees HEIs the right to establish conditions, criteria, and dates of the admission process. The law assigns all enrollment powers to the jurisdiction of univer-

sity senates [2] as the central academic body of university governance. Accordingly, it needs to pass a motion with all recruitment details not later than 30th June a year prior to the admission process (basically 1 year ahead).

The number of students enrolled depends on several factors such as the number of academics (teaching capacity) and the infrastructure capacity but there are no central regulations in respect to the maximum number of students HEIs can enroll in particular programs as long as they can provide a quality of education which is subject to independent accreditation carried by the Polish Accreditation Committee (PKA). Student admission lies at the heart of the autonomy of HEIs and since the beginning of political transformation (in 1989) the government has had no authority to interfere in either the number of students enrolled or the admission criteria of particular programs.

Prior 2005—a two-staged admission process

Until 2005, admission to HEIs was a two-staged process. The first stage was the ‘matura exam’ (now popularly called ‘the old matura exam’) at the end of secondary school. School leavers had to take an exam in selected subjects in both written and oral form, they receive grades from 2–5, where 2 is the lowest. The overwhelming majority passed ‘the old matura exam’ although with different results. Passing the exam was necessary, but not sufficient, to be admitted to an HEI. The second (independent) stage of admission was held internally by HEIs which had full authority to organize the entrance exams and set the criteria for admission. Theoretically, HEIs could use the results of ‘old matura exam’ but due to a lack of trust in its transparency and the fairness of the results, they preferred their own internal admission procedures and chose candidates based on these. HEIs organized their recruitment procedures based on (a) the entrance exams (written or oral), (b) selection based on grades from the ‘old matura exam’ or (c) the average of the first two criteria. In most cases, HEIs, particularly for popular programs, decided to organize their own recruitment procedures and (b) occurred rarely. Again, the final decision was entirely up to HEI.

In 2005, ‘the old matura exam’ was replaced with a new central examination system (‘the new matura exam’). It was organized and controlled centrally by the Central Examination Committee in order to provide the same conditions across the country. A wide range of measures were deployed to secure the transparency of the process and the credibility of the results. In order to pass ‘the new matura exam’ a pupil has to pass each of compulsory subjects (written: Polish, math, foreign language and at least one chosen subject) which is a minimum of 30% of total points, and pass the exam for at least one additional subject. HEI were obliged to respect the results of ‘the new matura exam’ in the admission process. They cannot organize additional entrance exams with the exception of testing specific skills in the fields of arts or fitness. As a rule, the results of ‘the new matura exam’ cannot be bypassed by any other form of admission procedures. Nonetheless,

the government still has no direct power to impact the size and criteria of enrollment except for medical, military, law enforcement and fire-fighting programs which are under a different jurisdiction and centrally regulated [3]. However, the government has authority [3] to close any program if it fails to meet the accreditation criteria set and inspected by PKA. Note, closing programs is an extreme measure and the process is used as a controlling instrument.

Indirect policy instruments

Despite the autonomy of HEI and the lack of direct policy instruments, the government has recently been trying to exercise some influence over the number of students enrolling in public HEI. The prime reason for launching the new policy measures was shrinking revenues from part-time students (who pay tuition fees), which public HEI wanted to compensate for by expanding the capacity of their full-time programs (tuition-free). In 2009, the government amended the law [3] imposing an enrollment cap (102% of the previous year) on public HEI. The amendment was meant to protect private HEI which stood on the brink of bankruptcy due to the deep demographic decline [4]. It slowed down the enrollment expansion of tuition-free programs in public universities but it did not solve the long term problem of the falling quality of education. Therefore a second and stricter policy step was to introduce the Student Staff Ratio (SSR) Index and make it part of the funding algorithm for public HEI. The government estimated that the optimum SSR is 13, and so if a university exceeds this, it gets less funding-per-student from the public purse. SSR impacted enrollment numbers leading to a more equal distribution of student-candidates across public HEI.

Summary

Since 1990, the admission system to HEI—both in terms of the number of admissions and the criteria—has been at the heart of the autonomy of HEI and as such remains within their jurisdiction. For almost two decades the state has conducted a ‘policy of non-policy’ [5,6] in regards to student admission. Wasielewski [7] showed that establishing ‘the new matura exam’ had a positive impact on access to higher education for those previously underrepresented. Only since 2010, has the government begun to steer, from a distance, using indirect policy measures (admission cap, SSR), although the government has only indirect influence on the number of admissions to public HEIs and absolutely no impact on the private sector. The only exemptions are medical, military, law enforcement and fire-fighting programs, which are under close state supervision.

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[7] Wasielewski, K. (2013). *Młodzież wiejska na uniwersytecie*, UMK: Toruń

Reading List

Admission systems from an international perspective

- Stead, V. (Eds.). (2015). *International Perspectives on Higher Education Admission Policy*. Bern, Switzerland: Peter Lang US. DOI: <https://doi.org/10.3726/978-1-4539-1443-4>.

This book covers research on the university admission policy and represents country-specific cases aggregated by the following sections: (1) national perspectives on higher education admission policy; (2) theoretical approaches to higher education admission policy; (3) applicant recruitment and student support services in higher education; and (4) diversity and equity in higher education admission policy implementation.

- Bolotov, V. (Eds.). (2020). *Admission to universities in post-Soviet countries: exams as a tool for solving state problems (Postupleniye v vuzy v postsovet-skikh stranakh: ekzameny kak instrument resheniya gosudarstvennykh zadach)*. Moscow, Russia: NRU HSE Publishing house. (in Russian). DOI: <https://doi.org/10.17323/978-5-7598-2193-9>.

This monograph considers entrance exams to higher educational institutions in six post-Soviet countries: Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Russia and Tajikistan. The authors highlight what tasks the states sought to solve by reforms of the admission procedures in different higher education systems, and whether they succeeded. Country-specific cases demonstrate the causes and consequences of changes in the educational systems of the post-Soviet countries.

University admissions and the accessibility of higher education: theoretical approaches and empirical research

- Chapman, D. W. (1981). A model of student college choice. *The Journal of Higher Education*, 52(5), 490-505.

This is a famous paper which considers college choice as a multistep series of educational decisions influenced by external and internal factors. Some of them may limit the accessibility of higher education for certain socio-economic groups.

- Croll, P. (2004). Families, social capital and educational outcomes. *British journal of educational studies*, 52(4), 390-416.

This paper presents a conceptual framework and the results of empirical studies focusing on the role of family in the transmission of social capital and educational inequalities.

- Haveman, R., & Smeeding, T. (2006). The role of higher education in social mobility. *The Future of children*, 125-150.

This paper considers inequalities in top universities in the US and offer policy recommendations to increase educational opportunities for low- and middle-income students.

- Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *The journal of higher education*, 76(5), 485-518.

This paper examines the relationship between parental involvement, a student-level form of social capital, and the likelihood that a student enrolls in a 2-year or 4-year college or university degree and the differences in parental involvement across racial/ethnic groups.

- Reimer, D., & Pollak, R. (2010). Educational expansion and its consequences for vertical and horizontal inequalities in access to higher education in West Germany. *European sociological review*, 26(4), 415-430.

This article studies the access to tertiary education of students of different social origins in light of educational expansion in Germany. The results show that unequal opportunities to access postsecondary and tertiary institutions remain constant, and socio-economic background effects remain stable in the long run.

University admissions in Russia and the barriers of access to higher education

- Loyalka, P., & Zakharov, A. (2016). Does shadow education help students prepare for college? Evidence from Russia. *International Journal of Educational Development*, 49, 22-30.

- Prakhov, I., & Yudkevich, M. (2019). University admission in Russia: Do the wealthier benefit from standardized exams? *International Journal of Educational Development*, 65, 98-105.

- Prakhov, I. (2017). The prevalence and efficiency of investment in pre-entry coaching in Russia. *Tertiary Education and Management*, 23(2), 170-185.

- Prakhov, I. (2016). The unified state examination and the determinants of academic achievement: Does investment in pre-entry coaching matter? *Urban Education*, 51(5), 556-583.

These papers address the issue of pre-entry coaching in order to improve the USE results. Based on different datasets and methods, the authors report insignificant or small positive effects of private tutoring on student achievement. However, students from more affluent families and high achievers may benefit from such preparatory programs, which raises the problem of inequality of educational opportunities.

- Konstantinovskiy, D. L. (2012). Social inequality and access to higher education in Russia. *European Journal of Education*, 47(1), 9-24.

- Prakhov, I. (2016). The barriers of access to selective universities in Russia. *Higher Education Quarterly*, 70(2), 170-199.

These papers examine the role of family and school in the accessibility of higher education. Social differentiation remains the main factor in inequality of educational opportunity in higher education in general and in the most selective universities.

- Bugakova, P., & Prakhov, I. (2020). Regional Accessibility of Higher Education in Russia. *Higher School of Economics Research Paper No. WP BRP*, 58.

- Francesconi, M., Slonimczyk, F., & Yurko, A. (2019). Democratizing access to higher education in Russia: The consequences of the unified state exam reform. *European Economic Review*, 117, 56-82.

- Prakhov, I., & Bocharova, M. (2019). Socio-economic predictors of student mobility in Russia. *Journal of Further and Higher Education*, 43(10), 1331-1347.

These papers consider educational mobility during the university admission process. The introduction of the USE positively affected the levels of student mobility, however, financial and other constraints may keep university applicants from moving to another region. The decision to move is determined not only by student abilities, but also by family and school characteristics. Regionally, students from small towns and rural areas face the biggest set of restrictions, while students from Moscow are in the most advantageous position.

About HERB

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Our audience represents a wide international community of scholars and professionals in the field of higher education worldwide. The project is implemented as part of cooperation agreement between the Higher School of Economics and the Boston College Center of International Higher Education.

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