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Higher Education in Russia and Beyond



Doctoral Education: Challenges and Prospects



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Dear colleagues,

We are happy to present the new issue of *Higher Education in Russia and Beyond*, a journal that is aimed at bringing current Russian, Central Asian and Eastern European educational trends to the attention of the international higher education research community.

This issue focuses on the challenges of organization and reform of doctoral education. Doctoral education is traditionally perceived as a mechanism of training new generations of academic staff. Still, doctoral education is nowadays aimed at training professionals for sectors other than academia too. PhD holders who choose a career outside the academia are no longer 'black sheep,' and doctoral programs are designed in a way that takes such career opportunities into account too. How efficient is doctoral education nowadays when it is facing shifting borders between universities and the outside world, especially in the context of new labor market demands? What indicators should be used when evaluating the efficiency of doctoral programs? To what extent do those indicators reflect the goals of modern doctoral education?

Efficiency of doctoral programs may also depend on students' goals and motivation. The present issue sheds light on who doctoral students are and why they choose this path.

The quality of doctoral education, conditions for degree awarding, and alumni employment mechanisms are all directly related to institutional capacity. To what extent does modern doctoral education meet the challenges and goals of building world-class universities? What do experts think about the courses of relevant reforms? What actions are already being taken? You will find the answers to these questions in the current issue.

*Higher Education in Russia
and Beyond* editorial team



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 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 49 research centers and 14 international laboratories, which are involved in fundamental and applied research. Higher education studies are one of the University's key priorities. 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.

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The Center for Institutional Studies is one of HSE's research centers. CInSt focuses on fundamental and applied interdisciplinary researches in the field of institutional analysis, economics and sociology of science and higher education. Researchers are working in the center strictly adhere to the world's top academic standards.

The Center for Institutional Studies is integrated into international higher education research networks. The center cooperates with foreign experts through joint comparative projects that cover the problems of higher education development and education policy. As part of our long-term cooperation with the Boston College Center of International Higher Education, CInSt has taken up the publication of the Russian version of the "International Higher Education" newsletter.

Contents

HERB

Issue 3(9) Fall 2016

Doctoral Education: Challenges and Prospects

General Issues

- 6 Konstantin Sonin**
It Is Difficult for Doctoral Education to Survive in the Absence of an Academic Market
- 7 Olga Zavgorodnyaya**
The Institute of PhD Awarding in Russia and Doctoral Education: Convergence or Divergence
- 9 Natalia Shmatko**
PhDs Within and Outside of the National Labor Market

Structural Reforms and Changes

- 11 Aliya Kuzhabekova, Aizhan Temerbayeva**
A Bird-View of Doctoral Education Reform in Kazakhstan
- 12 Elena Kobzar, Sergey Roshchin**
Transformation of Doctoral Education in Russia: Between Science and Education?
- 14 Elena Kobzar**
Enhancement of Doctoral Programs in Russian Universities:
Case of Higher School of Economics

Micro-view: Students and Programs

- 16 Yana Roshchina**
What determines Students' Intentions to Pursue a PhD in Russia?
- 18 Natalia Maloshonok**
Doctoral Students' Reasons to Pursue a PhD as a Cause of Low Completion Rate of Russian PhD Programs
- 20 Ivan Gruzdev, Evgeniy Terentev**
Life after PhD: What Careers Do PhD Students in Russia Consider?
- 21 Irina Teleshova**
Educational Doctoral Programs at the Faculty of Economics of Moscow State University

It Is Difficult for Doctoral Education to Survive in the Absence of an Academic Market

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The absence of a mature academic labor market constitutes one of the main problems for doctoral education in Russia – at least, in economics and other social sciences, a “weak link” of the Russian science. The world’s leading universities nearly never hire their own alumni – even the best of the best – directly after they get their PhDs, thus forcing them to look for a job outside their alma mater. Any department in any Russian university that aspires to be nationally or internationally competitive, should pursue the same approach as well. Otherwise, it would not be able to become a leader in its field, and, even more importantly, it would have hard time establishing a solid reputation as a leader. The efficiency of PhD programs should be measured by the number and quality of job offers that PhD holders from one university receive from other universities and institutes.

As of now, the typical academic career in a top Russian department involves getting an undergraduate and then graduate degree, followed by a junior research or teaching position in the same department. If successful, the career continues within the same walls. Thus, the focus on market-based hiring will be a drastic change to the established patterns.

In theory, there is much to regretted when the best alumni are forced to part with their alma mater. During their three years of studies, often preceded by another six years of bachelor’s and master’s studies, their research supervisors and other staff members get used to them; students start their own families and establish all kind of academic and social connections. Nevertheless, the benefits of the enforced greatly outweigh the costs – both for the schools seeking leadership positions and for their most recent graduates.

The benefits of such a policy for schools are obvious: the fact that their PhD graduates find employment at other universities testifies to the quality of those schools and their graduates. This is an ideal argument for attracting the most talented students to PhD programs, and it is valid not only for Harvard or University of Chicago, but for other schools seeking international recognition as well. However, it is not only about where the very best graduates end up; those who start their academic careers in less prestig-

ious universities are almost as important. They become a “walking advertisement” of their alma mater for their own students at their new university, and help spread scientific ideas and ethical values. Therefore, this precise indicator – i.e., the number of graduates employed at other universities – should be used to measure the efficiency of any PhD program.

Going to the open labor market is equally important for young PhDs. The market provides an unbiased assessment of their research value. If one does not succeed in finding a job within a year, it is a signal to either improve the quality of their research or consider a career outside of academia. No one at the home university will ever say that a PhD student’s research bears no scientific value, and if such a student is denied employment at other schools of the same university, it means that something has gone wrong. Alternatively, if a young researcher stays with the same department that granted her PhD, in a couple of years she risks ending up in an unpleasant situation with career stalling with no visible cause.

Unfortunately, the current environment is not conducive for strict enforcement of no-inside-hiring rule. The problem is that the Russian academic market is still in its infancy, while the Russian PhDs are non-competitive internationally. (Of course, the situation varies from field to field: for example, many Russian PhDs in physics, mathematics, biology or chemistry have landed jobs at the world’s leading research centres.)

While the academic market in Russia is underdeveloped in general, in some fields the issue is less pressing than in others. For example, HSE’s Faculty of Mathematics has it relatively easy: there are quite a lot of research centers and university departments all over Russia (especially in Moscow and Saint Petersburg) that are looking for talented PhDs. Even if the starting conditions there might be barely competitive and new colleagues focus on different areas of study, the modern world offers a lot of opportunities to foster academic and social ties via Internet or by means of travel. In the old times, it was convenient for researchers that belong to the same school of academic thought to stay close physically, in the same place; nowadays it is not necessary anymore, and many researchers maintain contacts with their former research supervisors and colleagues when changing university. In some disciplines such as experimental physics, it might still be advantageous if collaborators work in the same place. In fact, yet, even in this sphere long-distance research partnerships are becoming more and more common. This only further proves that one shouldn’t try to keep even the best graduates at their home school. This is another argument in favor of a statutory bar for state universities on hiring the graduates of their own PhD programs.

There is also another problem with the proposed rule, and it is more difficult to deal with. What if some department’s faculty is already so much better than that staying there is actually in the graduate’s best academic interests? PhD graduates of HSE’s Faculty of Economics are facing

this problem. On the one hand, their academic quality is not yet high enough to be hired by European universities or top Russian centers such as the New Economic School or International College of Economics and Finance. (Even though the latter is structurally part of HSE, it has its own international hiring procedures.) On the other hand, a talented young PhD might be apprehensive about working at an institution where their academic quality would not be appreciated by new colleagues. In my opinion, while these concerns do have some merit, they might be exaggerated: in Moscow (and in Russia on the whole) there are already quite a few schools that increasingly value high-quality research skills and the ability to publish in international journals. Of course, a recent PhD hired by a department with no or little research tradition, should maintain academic ties with former professors and fellow students.

At the same time, the first PhD graduates of Russian social science departments who find their first teaching positions at European universities will signify an important breakthrough. For the moment, it is our goal to produce graduates that would find employment in a decent European department such as CERGE-EI in Prague, University Carlos III of Madrid, or Royal Holloway in the UK. (Once this goal is achieved, the number of recent graduates employed rate at such institutions will be used as one of the success criteria.) This will not be just a step forward – this will be a step forward that is evident to everyone.



The Institute of PhD Awarding in Russia and Doctoral Education: Convergence or Divergence

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Russian degree awarding system differs significantly from Western practices. The current system, which goes back to the Soviet times, was born at the crossroads between European university tradition and close governmental control over the academia. The Russian model of degree awarding is still country-specific and remains one of the least reformed institutions in the sphere of education and research.

National System of Degree Conferral

Russia is one of the few countries with state two-level model of degree awarding. First, the candidate's dissertation is reviewed by a dissertation committee at a university or research institution. Then the dissertation committee's decision needs to be confirmed by the Higher Attestation Commission (known by its Russian abbreviation VAK) by the Russian Ministry of Education and Science. One can be awarded Candidate of Sciences degree (equivalent of Western PhD) only if both commissions give a positive review. The right to create a dissertation committee, and its members are approved by the ministry upon the recommendation of VAK. The costs of opening such a committee are quite high; they imply that the organization that has submitted an application (university or research institute) has to prove it is active in research as an institution and that the same applies to the proposed individual members of the future committee. Maintenance costs are quite high too: any changes to the committee (introduction of new members, removal of old ones, amendments to the list of research specializations that the committee is allowed to evaluate dissertations in) should be approved by the ministry as well and can be declined. In other words, a higher education or research institution has a right to have a dissertation committee but it is not an essential condition for its functioning.

Russian dissertation committees bear both generic and country-specific characteristics. The former include: public and open meetings, collective decision-making, expert evaluation of dissertations (opponency). The latter include the fact that the composition of the committee (no fewer than 19 members) is permanent regardless of dissertation themes, a limited list of research specializations the committee is allowed to evaluate and award degrees in (no more than 3 specializations per committee), mandatory presence of at least two-thirds of the members (over 10), and the fact that dissertation defence goes in Russian. The requirements to the candidate for a degree, as well as the requirements regarding dissertation contents, all the stages of the committee's work, and defence procedure are fixed by the government, and the rules are universal. Universities cannot change these unified requirements or introduce their own. Minutes are kept during each meeting, and a video-recording together with a bundle of other documents related to one's dissertation defence is sent to VAK. VAK casts the deciding vote and has a right to repeal the decision of the dissertation committee either on substantive grounds or for breach of order during the defence. This allows to deny someone a PhD degree on non-academic grounds. Tough requirements and the necessity to follow them rigorously make the process of dissertation defence highly bureaucratized.

Post-Graduate Education and Dissertation Defence

Post-graduate education aims at and leads to dissertation defence. Yet there is no implicit horizontal connection

between doctoral programs and the institute of degree awarding in Russia. Earlier the transition from post-graduate education to dissertation defence used to be smoother because there used to be quite a number of dissertation committees at various organizations and because the need to write and defend a dissertation was the only vocalized goal of post-graduate education. The simultaneous reforms of doctoral education and of dissertation committees, which we will discuss further, have created a gap between post-graduate programs and dissertation defence. The gap is growing both in terms of substantive links and in terms of the logistics of doctoral students' transition from post-graduate school to dissertation committee.

As a result of reforms, in 2012 post-graduate studies became the third level of higher education and now bear all the attributes of educational programs: doctoral students follow courses, take internships, and do research. There is now a fixed set of competencies that they are required to master. Traditional forms of training your researchers are now being revised. The approach to post-graduates' research work, to the institute of research supervisors and to the set of professional disciplines that post-graduates need to master is being transformed according to international academic standards. Integration into the global academic community forces universities to open English-language post-graduate programs, and to write articles and dissertations in English. Yet the requirements for successful dissertation defence are the same and take candidates' academic achievements into account only partially (e.g., publications in international citation indexing databases). It is still mandatory that the text of the dissertation presented for defence is in Russian, that the defence itself goes in Russian and that the candidate has only one research supervisor. In order to be admitted to the defence procedure, one has to pass three qualification examinations: foreign language test, history and philosophy of science, and profiling discipline (specialization), all of which have little to do with the candidate's actual research.

According to new federal standards, upon completion of post-graduate program one receives a diploma certifying that he or she has finished the education and is qualified as 'Researcher. Lecturer.' This leads to dual evaluation of post-graduates: state final certification, which results in an aforementioned diploma — and dissertation defence with the awarding of a Candidate of Sciences diploma. It is now not mandatory for those enrolled in post-graduate programs to defend a dissertation, and the two processes are virtually unrelated. The problem is that the logical relation between doctoral education and dissertation defence is now broken. A university doesn't have to have its own dissertation committee in order to open post-graduate programs, so the paths that lead to dissertation defence vary. If one is studying at an institution that has its own dissertation committee, one can switch from studies to dissertation defence in a direct and relatively smooth manner. Otherwise the candidate has to apply to another university's dissertation committee, which implies serious costs that can sometimes be prohibitive. This does not only

prolong the process of preparing one's dissertation but can also cause failure at the defence. The status of a young researcher that has completed a post-graduate program but has not managed to finish the dissertation on time and the mechanisms of further interaction between him/her and his/her respective university are currently undefined.

Reform Drivers

We have witnessed an active quest for a new national model of degree awarding that has been happening in the past five years. Reforms are driven both by the government and the academic community.

The Ministry of Education and Science has been transforming the system of degree conferral since 2012. It aims at raising the quality of dissertation committees and making their work more transparent. KPIs have been developed both for organizations that host dissertation committees and for the latter's individual members. The list of research specializations each committee is allowed to evaluate and award degrees in has been limited to no more than 3 per committee. The requirements to degree candidates have become tougher. The required number of publications in leading Russian or international citation indexing databases necessary to be admitted to the defence procedure has been raised to 3 in social sciences and humanities and to 2 in natural science. All the documents related to one's defence (the actual text of the dissertation, abstract, dissertation reviews, decision of the dissertation committee) have to be available in open access now: they have to be published on the website of the organization where the defence is taking place and in a state informational system.

Still, despite the reform, the two-level degree system has remained the same. So have the mechanism of evaluating dissertations, procedural rules for dissertation committees, and the two-stage process of dissertation reviewing. The dissertation committee's and the degree candidate's responsibility for breach of order has been raised. The reform resulted, first of all, in the fact the number of dissertation committees has fallen by one half, which has led to a mismatch between the number of degree candidates and the number of committees where they could defend their dissertations. Firm 'old' criteria for dissertation defence are not adjusted to the 'new' program of doctoral studies. Besides that, there is an emerging necessity to defend not just a dissertation but a whole package of 'dissertation-related documents,' the preparation of which has nothing to do with educational process. The number of required publications has increased and research quality criteria have stiffened but the length of post-graduate programs has remained the same, which forces PhD students to pursue quantity at the expense of quality.

Bottom-up transformative efforts have began in response to this top-down reform that has not managed to resolved major existing inconsistencies. Russia's leading universities have not only made it clear that a more flexible system of degree awarding is necessary but have also suggested an

alternative reform scenario. Some of them have already initiated (e.g., Saint Petersburg State University, Siberian Federal University) or announced (Novosibirsk State University) their own systems of degree awarding. Dissertation defence procedures and dissertation committees there are organized in accordance with international practices. New dissertation committees are part of their respective universities and award the degree of their university. Members change depending on the topic of dissertation submitted for defence, which is now also possible in English. The academic community has shown little demand for such degrees due to the fact that degrees awarded by particular universities carried no legal weight. Yet, leading universities' interest in and need to award their own degrees have formulated new reform agenda. In 2016, 'state-led' and 'university-led' reform scenarios finally intercrossed when the government announced that the country's two major higher education institutions — Moscow State University and Saint Petersburg State University — would be able to officially confer their own degrees as of September 2016. In 2017 similar rights will be extended to several universities that will be selected on a competitive basis. The new reform vector is still vague but the fact that leading universities are being allowed to award their own degrees (according to their own rules and criteria) suggests that the main inconsistencies between the system of post-graduate education and the institute of degree awarding are superable.

PhDs Within and Outside of the National Labor Market

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PhD holders' careers analysis shows that getting an academic degree is no longer enough for a career in research. The chances of getting a permanent job, of getting a good position at a university or research center depend not only on one's academic degree but also on one's experience, competencies and portfolio. The route from defending a dissertation to getting tenure is becoming longer: it now includes all kinds of temporary positions, such as internships and fixed-time (postdoc) contracts. Employers' considerations with regard to job candidates'

experience imply preference for candidates who have worked in several research or educational organizations, not only in their home country but abroad too. Therefore, young PhD holders' career become directly related to their level of mobility.

Evaluating the scale of doctoral holders' mobility and identifying their main mobility destinations are one of the main aims both of the international study Careers of Doctorate Holders (CDH; a joint project by the OECD, UNESCO Institute for Statistics and Eurostat) and of the related Monitoring of the Labor Market for Highly Qualified R&D Personnel (carried out at the at HSE Institute for Statistical Studies and Economics of Knowledge under HSE Program for Fundamental Research). [1] Research projects are focused on mobility at both national (changing jobs within the national labor market) and international levels (which implies moving abroad to work or to study, contracts with foreign employers, participation in joint research programs, etc.) [Gokhberg et al, 2016].

“Mainstream” and “Alternative” Career Paths of PhD Holders

Traditionally PhD holders have always pursued academic careers by working at higher education institutions of research centers. Employment outside of academia was considered to be an alternative career path. However, in the recent years the number of people with a PhD degree is growing much faster than the number of available academic positions, which is making non-academic careers rather common. Another long-existing alternative is to search for a job at the international academic market, which often results in emigration.

According to CDH results [Auriol, 2013; Gokhberg et al, 2016], the share of PhD holders working in the industry and in the service sector is steadily growing, as well as in high-tech production and intellectual services. In some European countries (e.g., Spain, Portugal, Belgium, Poland) up to 20-40% of all doctorate holders work in areas unrelated to research, while in the U.S., Japan and Taiwan this indicator is even higher.

Research competencies are being transferred to new professional areas where before employees were not expected to possess such qualifications. The competencies obtained during the period of doctoral education, dissertation research or postdoc employment are applied in new – “alterative” ways. On the one hand, this trend is related to the “massification” of research competencies. For example, after 2000 PhD awarding rates in the developed countries were equal to or even exceeded the rates of awarding bachelor's and master's degrees. On the other hand, technological innovations, high-tech production and the proliferation of science-driven services require employees with new skills and sometimes with unusual combinations of knowledge and skills. The skills and knowledge provided by STEM education are becoming essential for a growing number of professionals [NSB, 2015].

Career and Mobility

CDH results analysis shows that PhDs who are employed in the industry and whose work is not related to research change jobs more often than others. PhD holders who have left the academia for the business-sector often win in terms of remuneration but lose in terms of social status and scientific capital.

At the same time, the common perception that there is a relation between job change frequency and whether there is a match between one's job and educational background is not 100% true. The mere existence of a match between one's work and the area of one's doctoral degree or lack thereof is not enough for one to change jobs. In Belgium, for example, nearly one-third of all doctorate holders work in the sphere that is not related to their area of doctoral degree, while in Poland or Russia their share is much lower: just 6% or even 4.4% respectively. At the same time, in Belgium the share of PhDs who have changed jobs in the past 10 years is relatively low (15.2%) unlike Poland (63%). In Russia the situation in 2009 resembled that in Belgium (16%) but in 2012 this indicator grew and reached 24.8%. In other words, the mere existence of a relation between one's work and the area of doctoral degree alone cannot explain PhDs' mobility.

Switching to the business sector brings ambiguous benefits for Russian researchers, which can be seen, for example, in the case of the employees of the Russian Academy of Sciences. Their relative financial losses (compared to the salaries in the non-academic sector) are compensated by their chances to raise their social status by building a professional career in science and accumulating scientific capital. Besides that, there is a kind of compensation in the fact that they get better access to the international labor market.

The survey of researchers from European OECD-member countries indicates that there is a positive relationship between mobility and salary levels. More mobile researchers tend to be more satisfied with their salary and other types of payoff (wage premiums, bonuses). There is a similar relationship between mobility and prestige of a job [Boosten et al., 2014].

"Simultaneous" International Mobility in Science

It should be stressed that a career in research or as university teacher is still mainstream and remains the most preferable for young doctorate holders. It is no doubt that among the main drivers for such a career are international cooperation and building academic social networks. Interaction between scientists is not merely a mechanical exchange of certain knowledge, skills and social relations necessary for research; it also means an accumulation of social capital, which often results in the fact that one researcher obtain numerous institutional affiliations. This phenomenon necessitate the introduction of a new term and the study of a new type of

mobility – i.e., "simultaneous mobility," when a researcher is working for several organizations located in different countries at the same time and is based either in one of them or in the home country [Markova et al., 2016]. If one were to follow the geographical localization of a Russian scientist, one would see that this person is most probably living in Russia, followed by the U.S., Germany, France and the U.K.

The main result of joining international academic social networks often is publications co-authorship. Mobile Russian scientists are unevenly spread in terms of institutional affiliations: the G7 countries and Switzerland provide for a disproportionately high (57.8%) share of affiliations in comparison to Japan, China, South Korea, Brazil and India (9.3%). Mobile Russian researchers with a high citation index get affiliated with organizations that are located in the more developed countries in terms of science more often than their colleagues with a lower citation index.

Conclusions

Our study shows that despite the industry's growing need for research skills, young PhD holders are still aspiring for a traditional career in the academia. At the same time, major academic employers, i.e., big universities and research centers, are raising their requirements to candidates for tenured positions. Such requirements include an ability to work in multi- and interdisciplinary areas, in international projects, within international teams, in the context of uncertainty and a flexible distribution of duties. Many of such skills can be acquired via PhD students' academic mobility and young researchers' professional mobility. CDH outputs confirm that mobile researchers (especially those internationally mobile) show better competencies and are more productive, that they publish more often, submit more patents and exhibit higher job satisfaction.

Despite a rather low level of academic mobility (only 20% of Russian researchers were mobile at the national labor market in the previous 10 years, and only 15% – at the international labor market), on the whole, Russia does not differ much from other countries that participated in the CDH project. Internationally mobile Russian PhD holders that are involved in international cooperation gain various attributes of ultimate professional achievements, recognition and prestige.

"Simultaneously mobile" researchers are high in demand at the global labor market, beyond the national market. However, unlike the "traditional" brain drain situation, "simultaneous mobility" is beneficial for both home and host countries because researchers maintain relations with their home country. Further development of international academic cooperation and simultaneous mobility in particular will certainly help PhD holders' career advancement and enhance their relevance within and outside of their national labor markets.

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Notes:

[1] The monitoring includes sampling survey of R&D personnel at research and educational organizations and in the industry. For results of the Russian part of the CDH project see: [Gokhberg et al, 2016; Shmatko, 2016; Shmatko, Katchanov, 2011].



A Bird-View of Doctoral Education Reform in Kazakhstan

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Kazakhstan uses a diverse set of approaches to prepare young researchers. First, the largest number of young researchers are trained in domestic universities. Moreover, the number has grown from 32 in 1992 to 2,288 doctoral students enrolled in local universities in 2016 (Committee on Statistics of the RK, 2016). According to the National Report on Development of Education System in Kazakhstan (2014), the number of grants allocated to PhD program studies has increased from 500 in 2011 to 628 in 2016. In addition to training researchers at home, the government sends the most talented youth to prestigious universities abroad via the presidential "Bolashak" scholarship program, which was expanded to include PhD training support in 2006 and which had trained 84 PhD holders by 2014 (Center for International Programs, 2014). As of 2014, 72 "Bolashak" recipients were enrolled in PhD programs abroad. A proposal for offering a split-PhD program funded with "Bolashak" scholarship was introduced in 2014, whereby doctoral students would be trained jointly by a university in Kazakhstan and a partner university abroad. Recently, the world-class status aspiring Nazarbayev University (founded in 2010) has started to offer Western-style PhD programs staffed by internationally hired faculty.

During the period of independence, two distinct stages can be differentiated in the government's reform of domestic doctoral education. While the first stage was mostly associated with procedural and formal changes, the second stage was more focused on substance and quality. During the first stage, in the effort to bring doctoral training programs in alignment with the European education area standards Kazakhstan (1) moved from the Soviet two-level researcher training system, which included the degree of Candidate of Science and the degree of Doctor of Science, to the one-level system adopted in the European Higher Education Area, whereby the two degrees were replaced with the Philosophy Doctor (PhD) degree; (2) introduced

credit system for accounting of degree-completion requirements, their transferability, as well as for curriculum planning; and (3) changed the committee composition to include an external committee member from abroad following a widely used Western practice.

Procedural changes have not brought quality. Most graduate programs, especially in humanities and social sciences, did not have qualified research-active faculty, had very limited access to laboratory equipment, materials, proper library resources, research and conference participation funding. Students had very poor knowledge of the English language and did not receive neither foundational theoretical and methodological training nor practical research and scholarly publication experience. Plagiarism became widespread, and a PhD degree evolved into a highly prestigious and expensive commodity, easy to buy and to sell in the form of a purchased in the black market and defended via paying a bribe doctoral dissertation. PhD degree transformed from a credential signaling a high level of intellectual ability and research potential to an expensive license providing an elitist status and access to higher positions and influence in academia and outside (e.g., government) by signaling a high level of financial and social capital.

As Kazakhstan's economic development strategies became oriented towards innovation and economic diversification, educational reformers started to pay more attention to the quality of academic training. The government introduced a number of new requirements to ensure higher quality of PhD education. These included the expectation that all PhD candidates would have 7 publications, including at least one in international impact-factor journals, in addition to defending a dissertation in order to be conferred the degree. All PhD program applicants are now required to pass an English language test. Fluency in English is mandatory due to the fact that doctoral students have to publish their articles in international journals. While restricting access for some talented students who lack language skills, this requirement can be expected to boost the quality of researchers by allocating scholarships to those who have a greater potential to integrate in the international scholarly community and to publish in international journals. PhD students are now required to spend some part of their training abroad and the government provides funding to enable international mobility.

These measures have produced both positive and negative outcomes. On the one hand, the need to publish in international journals, the involvement of international advisers and international mobility have enabled PhD students to acquire better research experience and skills. Highly motivated and research-active dissertation supervisors were able to link their supervisees with good external experts, including their research collaborators, thus creating opportunities not only for their advisees but for themselves too. On the other hand, introduction of the publication requirement without increasing awareness of the publication process and without taking steps to enhance research skills and methods among both faculty and doctoral students has resulted in an increased rate of paid publications

or publications in fraudulent journals. The growing stringency of graduation requirements has contributed to further decline in the prestige of academic career.

In general, structural reforms in PhD program organization have created conditions for subsequent transfer of best international practices. However, in order for such transfer to take place, substantive changes are necessary in the sphere of funding, curriculum planning, and instructional approaches. More importantly, to make academic career more attractive, measures should be taken to raise university faculty salaries and the amounts allocated for PhD student scholarships.

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Rebalancing Doctoral Education in Russia: Between Science and Education?

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The current state and problems of doctoral education in Russia are in sync with what is happening in other post-Soviet countries. Doctoral programs success rate, - only 20% of all post-graduates manage to defend their dissertation directly after finishing their educational program (25,000-30,000 young people complete doctoral programs every year). The quality of dissertations is, on average, rather low. The number of doctoral students in Russia has steadily grown over the past two decades: from 60,000 in 1995 to 120,000 in 2014. Until recently the amount of organizations that could train post-graduates had been growing too. Most PhD students (90%) write their dissertations at higher education institutions, 10% — at research centers. Many educational and research organizations can open doctoral programs (get a license for training post-graduates). Research capacity requirements for the organizations that wish to get such a license are rather soft, therefore the quality of doctoral education in Russia remains uneven.

Doctoral education is to a large degree (up to 50%) funded by the state in the form of allocated funds (which also provide for scholarships for post-graduate students). The level of state scholarship is 35-85% of the minimum wage.

In 2012, a large-scale reform of doctoral education began. A reform of the institution of awarding academic degrees followed very soon. The changes were aimed not only at raising the quality of PhD dissertations but also at harmonizing state funds allocated for doctoral education by reducing the number of post-graduate programs at organizations with low research capacity.

The first step - the reform of postgraduate training technologies and changing the structure of doctoral program. In practice this means that now doctoral programs have all the same features as other educational programs as set forth by Russian legislation. First students admitted according to the new rules started their education in 2014 and are expected to graduate in 2017.

The first two years of this new approach to doctoral education allow to draw some conclusions. Automatic transfer of regulatory mechanisms originally designed for (teaching-intensive) bachelor's and master's programs to (research-intensive) doctoral programs has shifted the latter's focus from research to education.

Changing just the technological framework of training young researchers bears serious implications for the whole institution of doctoral education due to shifting costs-and-benefits balance of writing a dissertation. This, in its turns, changes the stimuli that drive doctoral students and organizations offering post-graduate education. One can state that the system of stimuli for preparing a good dissertation within the prescribed time limits has remained unchanged.

The main challenges that needs to be resolved in order to improve the quality and efficiency of doctoral education in Russia are the disconnectedness of the two aforementioned reforms, impeded internationalization of doctoral programs in Russia, and a mismatch between the system of doctoral education efficiency evaluation and the goal of improving the quality of PhD dissertations.

Harmonizing Doctoral Education with the System of Degree Awarding

One of the peculiarities of the Russian system of degree awarding is the fact that dissertation committees and the way they are regulated are separated from doctoral programs. The former are not only isolated regulatory: PhD students often write their dissertations in one organization (university, institute) and defend them in another. The logic behind this is to ensure independent evaluation of PhD dissertations.

The aim of improving dissertation quality has induced transformations in the sphere of degree awarding: the norms regulating dissertation committees and the requirements to PhD dissertations have become tougher. However, this mostly applies to formal requirements: PhD candidates are now required to have more publications, the requirements to choosing reviewing experts for dissertation defence have become stricter, it is now obligatory to do a video- and audio-recording of the meetings of dissertation committees, the minimal time period between submitting one's text to the dissertation committee and the defence has risen, etc. For example, nowadays in order to defend a dissertation one has to have 2-3 publications (depending on the discipline) in peer-reviewed journals selected by the Ministry of Education and Science. The list also includes journal indexed in the major international citation indexing databases: Web of science and Scopus. It is imperative for PhD students in Russia to defend their dissertation directly after completing their doctoral program; together with the publications requirement this leads to the fact that doctoral candidates have to choose between quality and quantity when writing articles. The efficiency of doctoral programs is measured in the number of dissertation defended by PhD candidates within one year after completing their studies. This comes into conflict with the reform of the system of degree awarding, which has introduced tougher dissertation quality requirements while the strict time limits available for writing one's dissertation have remained the same.

One of the novelties whose practicality is currently under discussion was the renunciation of dissertation as a final point of doctoral studies. The adoption of the new model of doctoral studies will help dampen the conflict between quality and efficiency (i.e., the number of dissertations defended within the set time limits). The new doctoral programs end with the defence of a graduation thesis (like at bachelor's or master's level). However, this will lead to further separation of doctoral education and the institute of degree awarding from each other.

Such separation has another 'side-effect': there is a new qualification ('instructor-researcher') emerging in addition to academic degrees, yet such a qualification does not exist in international systems of professional qualifications or education levels. This will have dubious effect on the academic labor market: there is a whole new group of professionals who do not differ fundamentally from master's degree holders in terms of competences.

A good alternative for such reforms would entail harmonization of doctoral education with the system of degree awarding and a review of doctoral education efficiency indicators.

Quality Assurance in Doctoral Education

It is not possible to improve the quality of PhD dissertations without a more selective approach to educational and research institutions that have a right to open doctoral programs.

The current quality assurance system (accreditation of doctoral programs) is modelled on similar systems used for bachelor's and master's programs. The methodology is built in such a way that it allows to assess primarily the educational part of doctoral programs (the quality of courses and student outcomes). When it comes to bachelor's and master's programs, such a focus on education is due to the fact that educational courses make up 50 to 80% of the curriculum. However, when it comes to doctoral training, which implies primarily non-educational workload (over 85%), a quality assurance system with a focus on the educational component rather than the research one does not help select the best programs.

The (only) doctoral training efficiency indicator — i.e., the share of PhD candidates (of all admitted to the program) that manage to defend their dissertation within the set time limits, — is one of the main elements of the current quality assurance system. Yet, this indicator does not contribute to the aim of improving the quality of PhD dissertations. The stiffening of formal requirements to dissertation defence procedure, the expansion of waiting time before one is allowed to organize a defence, and the downturn in the number of dissertation committees have already led to a decrease in the amount of dissertations defended within the prescribed time limits. The government perceives this as a negative result. However, this one and only efficiency indicator cannot be used as dissertation quality measurement tool. Therefore, a successful reform aimed at improving the quality of PhD dissertations requires the introduction of new indicators and the development of a statistical records system that would focus on assessing the quality of research results, which are directly related to the quality of the dissertations themselves.

Internationalization

The existing model of doctoral training is intrinsically impedimental to incoming international mobility. The main barriers include dissertation defence requirements (qualifications exams and dissertation defence have to be done in Russian, the text of the dissertation has to be written in Russian too) and enrollment requirements, e.g., the fact that entrance exams have to be done in Russian (including the philosophy exam, which was mandatory until 2016) and that the applicants have to submit their original master's (specialist's) diploma when applying, which prolongs the admission campaign in comparison to international PhD programs. Thus, enrollment requirements, learning environment and, above all, dissertation defence require-

ments make Russian doctoral programs less attractive for foreigners if compared to international programs.

Short-term plans include removing entrance barriers by reviewing enrollment requirements and adjusting them to the admission rules in place at foreign doctoral programs. Granting Russian educational and research institutions a right to independently award academic degrees would also help make Russian PhD programs more competitive internationally.

Enhancement of Doctoral Programs in Russian Universities: Case of Higher School of Economics

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National Research University Higher School of Economics (HSE) opened its first doctoral programs in 1995. In the first 20 years doctoral education at HSE expanded in terms of the diversity of available programs: new programs in humanities (history, philosophy, philology) and natural sciences (engineering, mathematics, computer science) were opened in addition to the already existing programs in social and economic sciences. There are currently over 800 post-graduates at HSE.

The university has always been searching for and selecting techniques of working with doctoral students. Doctoral students' obligations (annual evaluation criteria) for each stage of their studies are now formalized, and interim evaluation by one's research supervisor is now supplemented by collegial evaluation, which is carried out by a special attestation commission that includes a wide range of researchers from various departments (not only the department where a post-graduate is studying). At the same time a quest for new elements of post-graduate education is going on: these include academic mobility programs and deeper engagement of doctoral students into both internal and external research projects.

Yet, the main aspects of the process of training young researchers had remained the same until very recently. Before 2014, the development of post-graduate education at HSE followed the European model when a student is 'locked' to his or her supervisor. The latter remained the former's main 'channel' of filling the gap in terms of research skill and methods. One's dissertation is evaluated

at different stages by the specialists belonging to the same department where one is studying. A broader range of experts is only involved at the stage of submitting one's text to the dissertation committee.

The two main novelties of the past 5 years at HSE include Advanced Doctoral Program and the new governance model of doctoral programs, which is now done through doctoral schools.

Advanced Doctoral Program

In 2010 year, Advanced Doctoral Program was launched. It was created as a structured program (following the American PhD education model). The goal of the program is to train globally competitive researchers who would be capable of publishing articles in international peer-reviewed journals and be part of international academic networks.

The program was aimed at creating a fruitful academic environment for doctoral students. The key role still belongs to research supervisor. The program includes an obligatory educational part: advanced courses in basic professional disciplines, as well as courses developing their academic knowledge and skills, research seminars, etc. The main goal of the educational part is to keep the students up-to-date with the current research agenda and to help them master latest research instruments.

Another obligatory part of the program is academic mobility: second-year doctoral students spend several months at foreign universities and research centers. Such research internships allow them to become part of international academic networks, receive feedback on their own research from a broader academic community and engage into the contemporary research agenda.

In order to motivate the students to focus on research the university provides them with additional scholarships and pays for participation in internal research projects. [1]

40 new students (about 15% of all enrolled students) are admitted to the program every year. The very first alumni graduated in 2013. The results of the program include higher publication activity among the participants in comparison to 'ordinary' doctoral students. The former publish articles in international high-impact peer-reviewed journals 2.5 times more often than the latter. Successful dissertation defence rate at Russian doctoral programs is, on average, relatively low. In contrast, 40 to 50% of the participants of HSE Advanced Doctoral Program manage to get a degree at the end of their studies.

Doctoral Schools

Doctoral programs used to be managed via structural units (faculties), which did not allow them to select a critical amount of efficient research supervisors and to organize wider expert evaluation of post-graduates' dissertations (by involving not only the researchers employed at the same department but involving people from other departments too on a regular basis). Such a way of training young researchers came into conflict with the way final evaluation (i.e., dissertation defence) is organized because

the latter is done by discipline-specific dissertation committees that consist of experts from different departments. Besides that, it is important to understand that HSE (founded just over 20 years ago) has been growing fast and expanding by means of various research teams with their own history and research tradition. Therefore it was difficult to set universal research results evaluation criteria that would also be applicable in the sphere of training young researchers (i.e., doctoral programs).

As a result, graduate students often choose supervisors outside the context of the last academic success. Post-graduate training system does not stimulate students to include in academic network outside departments until the last stages of work on the dissertation. All these system problems resulting in the loss of quality of theses, reduced the total number of completed theses accepted for defense in the dissertation committees of the HSE.

The introduction of doctoral schools at HSE — a move aimed at creating a 'critical amount' of research supervisors, attracting top students and ensuring collegiality in dissertations evaluation

In other words, doctoral schools are aimed at overcoming the lack of territorial and institutional integration within the university and ensuring that the same criteria apply to all doctoral students within the same discipline.

A doctoral school is a community of doctoral students and research supervisors from different departments, chairs, centers, labs or university branches which all train young researchers in the same discipline. Each doctoral school is headed by an academic director and governed by an academic council. There are currently 14 doctoral schools at HSE: doctoral school of economics, computer science, education, history, law, management, mathematics, philology, philosophy, political science, psychology, social sciences, technical sciences, physics and mathematics

Further Development and New Challenges

HSE's immediate goals in terms of the development of doctoral education include further internationalization of doctoral programs and the introduction of a system that would allow the university to award its own academic degrees.

Internationalization is essential in order for doctoral programs to be competitive. The university has already done some important steps: it supports academic mobility and hires professors that read lectures and supervise doctoral research at the international labor market. A quarter of all courses available to doctoral students are read in English. By immersing them into international research environment the university has increased their English-language publication activity. 15% of all articles published by HSE's doctoral students in 2015 were in English, half of them — in international peer-reviewed journals.

The next step is to expand incoming academic mobility and to increase the number of international English-speaking doctoral students. So far, most incoming post-graduates choose short-term research internships. The number of foreigners coming to complete a full PhD program is low.

In order to make doctoral education at HSE more attractive for the graduates of leading international universities, it is necessary not only to expand the English-language part of the educational program but also to change dissertation defence procedure.

The current procedure, which is authorized by the Ministry of Education and Science and is mandatory for all universities and research centers, does not allow writing and defending a PhD dissertation in a foreign language (English). The fact that the procedure is highly bureaucratized makes it unattractive for foreigners too.

When universities are granted a right to award their own academic degrees (and to independently set all the relevant rules and criteria), HSE will have more opportunities to engage leading researchers into the process of defending PhD dissertations. Freedom from excessively tough formal requirements and procedures that dissertation defence currently implies without detriment to the quality of research would make doctoral education in Russia more attractive both for foreigners and for Russians.

Notes

[1] State scholarship for doctoral students is not high (30 to 100 USD per month), so HSE provides extra financial support to the participants of Advanced Doctoral Program from its own funds.

What determines Students' Intentions to Pursue a PhD in Russia?

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After the new law on education was passed in Russia in 2013, PhD programs have become the third level of higher education. If before Russian PhD students were supposed only to work on their dissertations, actually they should study too. Nevertheless, doctoral education will probably remain the main means of access to academic careers.

According to G. Becker's human capital theory, gains from doctoral studies – being both a consumption good and investment into human capital – in terms of salary after a receiving a PhD should exceed the costs of train-

ing and dissertation defense. Some international studies have indeed found high returns to a PhD degree. However, our research based on RLMS-HSE data for 2006-2011 in Russia shows there are nearly no earning differentials between young professionals aged 20-35 holding a PhD and a master's degree (while the latter gives a 30% premium compared to bachelor's or specialist diploma). This means that applicants to PhD programs are attracted by other kinds of labor market benefits: low chances of unemployment, access to academic careers. Some researchers also mentioned such goals of pursuing doctoral degrees as personal enhancement, acquiring new knowledge and skills, desire to study, social connections, etc. However, the costs related to doctoral training and dissertation defense are very high: according to Russian Statistics Service, graduation rate is quite low: only 60% of all those who enroll in a PhD program complete the required curriculum and only 20% manage to defend a dissertation.

The **goal of our research** is to identify factors that affect Russian students' propensity to pursue a PhD degree. We anticipate that just like other degrees, doctoral education in Russia is more appealing to students with high levels of human and family capital. Besides that, we would like to test if the presence of a mature academic culture at one's university has an impact on their intentions regarding PhD education.

Data. Our research is based on *Economics of Education Monitoring* data. This monitoring has been realized by the Higher School of Economics in 2006-2015. More than 2500 full-time Russian students were surveyed annually. We estimated the regressions for two periods (pre-policy and post-policy) separately: 2010-2013 (11,129 respondents) and 2014-2015 (6,400 respondents). The latter sample was weighed by region and educational program according to the official statistics of Russian Federal State Statistics Service (Rosstat): 16.9% of the respondents were studying in Moscow, 65% were Bachelor's students, 29% were pursuing specialist degree (5-year educational programs), and 6% were Master's students.

Most of the students believe that PhD holders are in a beneficial position on the labor market. In 2014, the respondents of the *Economics of Education Monitoring* were asked to evaluate the benefits that PhD holders have. Only 15% of the respondents said that having a PhD does not lead to any extra benefits (only 10% of those who were planning to apply for PhD programs shared this view). Over 64% of the respondents said that PhD holders can get higher positions, 41% – that they can earn more, and 29% – that they can find a job faster. The share of those who think that PhD holders are in a beneficial position on the labor market is higher among Master's students and among the students who would like to pursue a PhD degree. In other words, a PhD degree seems to be an attractive option for students because it is associated with extra benefits, but getting a PhD requires a lot of effort, so relatively few students decide to pursue doctoral education.

Demand for doctoral education has decreased over the past 10 years. Full-time students surveyed annually as part of the *Economics of Education Monitoring* were asked whether they would consider doing a PhD in Russia currently or at any time in the future. About 35-40% of students consistently can not give a definite answer to this question, so we combined those answering “No” and “Don’t know” into one group, and treated only those who answered “Yes” as students with intentions of getting a PhD. Survey results shows that the demand for doctoral education has decreased since the late 2000s, especially among Moscow students. In 2006-2007, for example, over a quarter of all Moscow students were considering PhD programs, in 2008-2009 this share rose to 28-29% while in 2014 and 2015 it declined to 16.4% and 18.2% respectively. Among the studying outside of Moscow this percentage remained stable at about 17% in 2006-2009, then fell to 12% in 2013-2014 and grew again to 14.8% in 2015. These estimates are in line with Russian Federal State Statistics Service information: in 2007, for example, 35 700 people graduated from PhD programs in Russia, while in 2015 the number of PhD programs graduates dropped to 25 800.

More than half of all students considering doctoral education are not focused on building an academic career. Getting a PhD often implies a career in the academia (either in teaching or research) or analytical work in the private sector. In 2013, survey participants were asked about various employment options they were considering 5 years after graduation. Not unexpectedly, Master’s students showed equal preferences for all the three of the above-mentioned options: 29% of them said they could become university instructors, 25% said they considered a career in research, and 26% said they would consider doing analytics in the private sector. Such employment options were more popular among Moscow-based Master’s students than among those outside of Moscow. Bachelor’s students would choose these options 1.5-2 times less often. As expected, the share of academically-oriented young people was higher among the participants who wanted to pursue a PhD degree: 40% of the respondents were positive about a potential teaching career, 31% – about a potential career in research, and 22% – about analytics jobs in the private sector. These shares were 10%, 8% and 12% respectively among the respondents who were not considering doctoral programs. Still, these data show that only half of those who intend to pursue a doctoral degree would like to build a career in academia.

Students’ human capital has a positive effect on their intentions to do a PhD. We have analyzed a regression model with a discrete dependent variable that was measuring students’ intentions to do a PhD after graduation from university. Independent variables included students’ personal characteristics (sex, specialization, marital status, participation in research), their parents’ characteristics (education, job position, income), and university parameters (type of educational institution, academic environment, measured by faculty’s participation in research and publication activity). Two separate regressions were esti-

mated for 2010-2013 and 2014-2015 (before and after the new law), showing similar results. Our results indicate that men are more inclined to do a PhD than women. Next, students who specialize in humanities, science and biology were more likely to pursue a PhD compared to students in social sciences, and students pursuing a Master’s degree were more likely to get a PhD compared both to students in four year (Bachelor’s degrees) and five year (Specialist degree) programs. The probability that a person will enroll in a PhD program is higher among graduates of specialized secondary schools or gymnasias and those who were choosing a university based on the quality of education. Good performance at university, work experience during university studies and participation in research contribute positively to one’s intentions of doing a PhD. These intentions are also more common among students in Moscow and among students of universities with a higher share of faculty who have an academic degree, do research and have publications. Having a mother with a university degree is the only family capital parameter that has a positive impact on one’s desire to do a PhD, while coefficients at other parameters – e.g., family income, parents’ job, number of siblings, indicator for a single-parent family – were not significant. So are the student’s own marital and parental status.

Conclusion

Economics of Education Monitoring data show that though 85% of students recognize the labor market benefits of having a PhD degree, the demand for doctoral education among Russian students decreased in 2010-2015 compared to 2006-2009. The intention to pursue a PhD is correlated with having a focus on building an academic career. It is important to mention that regression analysis has shown that a good academic environment at one’s university, one’s own commitment to one’s work and studies, and one’s parents’ human capital have a positive impact on one’s motivation to pursue a PhD.



Doctoral Students' Reasons to Pursue a PhD as a Cause of Low Completion Rate of Russian PhD Programs

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Introduction

The mission of doctoral education is to serve the function of permanently replenishing the academic community with new scientists. However, Russian PhD education demonstrates a low level of efficiency due to several reasons. [1] The first reason is that universities and research organizations with PhD programs have difficulties in

copied with the massification of Russian PhD education. Between 1992 and 2006, the number of PhD students increased by 2.5 times (approximately from 60 000 to 150 000) (Bednyi & Mironos 2008). According to the government statistics agency, there were 119 868 PhD students in Russia in 2014. The second system-level problem of Russian doctoral education is that a large share of graduates with a PhD degree prefer not to pursue academic positions. Despite the growth in PhD students number in the last decade, the amount of researchers in Russia was decreasing annually from 807 066 in 2006 to 735273 in 2011 (according to government statistics). Low completion rate is the third problem. According to government statistics, in 2007-2013, only 25%-30% of PhD students had defended dissertations within the prescribed time limits. In addition, the number of defended dissertations began to decrease slightly after 2011 and dropped down in 2014 because of toughened requirements to PhD graduates (Fig. 1). These problems are not unique for Russian doctoral programs; however, they essentially influence the development of Russian science. Therefore, the causes of low completion rate at Russian PhD programs are of great concern for policymakers and educators. In this paper, I suggest that an important cause of the high dropout rate is low efficiency of the PhD student selection mechanism.

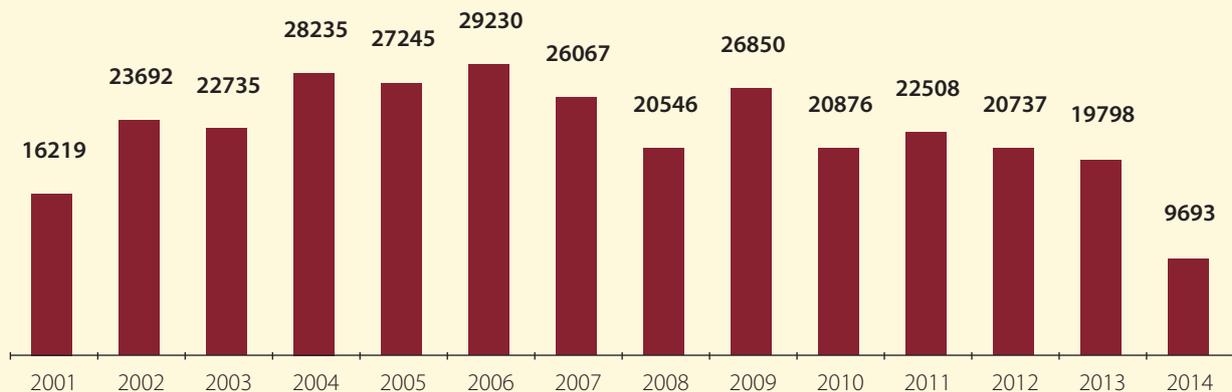


Figure 1. The number of dissertations defended in 2001-2014 (either while studying at a PhD program or afterwards)

Quantitative data gathered in an online survey of PhD students from 15 Russian universities (n=2285) is employed in this paper. [2] The field study was carried out in April and May 2016.

Profile of PhD Education in Russia

Since 2014, PhD education is the third level of the higher education system. PhD education in Russia is to a great extent regulated by state agencies (Ministry of Education and Science, Higher Certificate Committee). Universities

have little autonomy in defining rules for admission and curriculum. In order to apply for most PhD programs, individuals must have master's degree. The main criteria for admission are the results of entry examinations (foreign language, special discipline). In addition, a higher education institution may introduce other criteria that have some weight (letters of motivation, research proposal, certificates of language proficiency, portfolio, etc.). The length of PhD programs varies from 3 to 5 years. PhD students have to present their dissertation at a special seminar within

their institution at the end of their studies or within one year after they have finished. If the faculty evaluate one's dissertation positively, one gets access to defending it under a special committee.

Reasons to Apply for PhD Programs

The prevalence of reasons to apply for a PhD has been estimated by carrying out an online survey of Russian PhD students. The respondents were asked about their reasons to apply for a PhD program. They could choose any number of options from the following 8 items:

- I think that my PhD program will help me build a career as an instructor/teacher at college/university or other educational institution;
- I think that my PhD program will help me build a career as a researcher at college/university or other research organization;
- I think that my PhD program will help me build a non-academic career;
- I think that my PhD program will help me build a career as a researcher-analyst at a business organization;
- I would like to continue education in my field of study;
- I did not want to leave university/academic environment;

- I would like to get a deferment from the army;
- I would like to live at a university dormitory.

According to our data, the reasons related to non-research career promotion are the most popular among Russian PhD students. In addition, the share of respondents interested in research is huge too. Approximately half of doctoral students applied for a PhD program in order to build a career as a researcher (52%) or an instructor/teacher (48%) (see Fig. 2). One third of the respondents considered a PhD program as a means to develop a non-academic career (35%) or as a way to continue education in their field of study (33%). About 23% of male PhD students use PhD education as a chance to avoid military service, however, only 0.9% marked this reason as the single one. The opportunity to live in a university dormitory was chosen by 7% of doctoral students, and only 0.3% considered it as the only reason.

Most of the respondents chose more than one reason why they had decided to pursue PhD in interviews as well as in survey (66% of the respondents marked 2 or more options). A quarter of PhD students have chosen reasons related to the development of teaching and research career simultaneously. In addition, together with a desire to build a research career, a number of students indicated that they wanted to continue their education (18%) or to build a non-academic career (16%). Moreover, those reasons came up comparatively often together with a desire to develop an instructor/ teacher career (16% and 14% respectively).

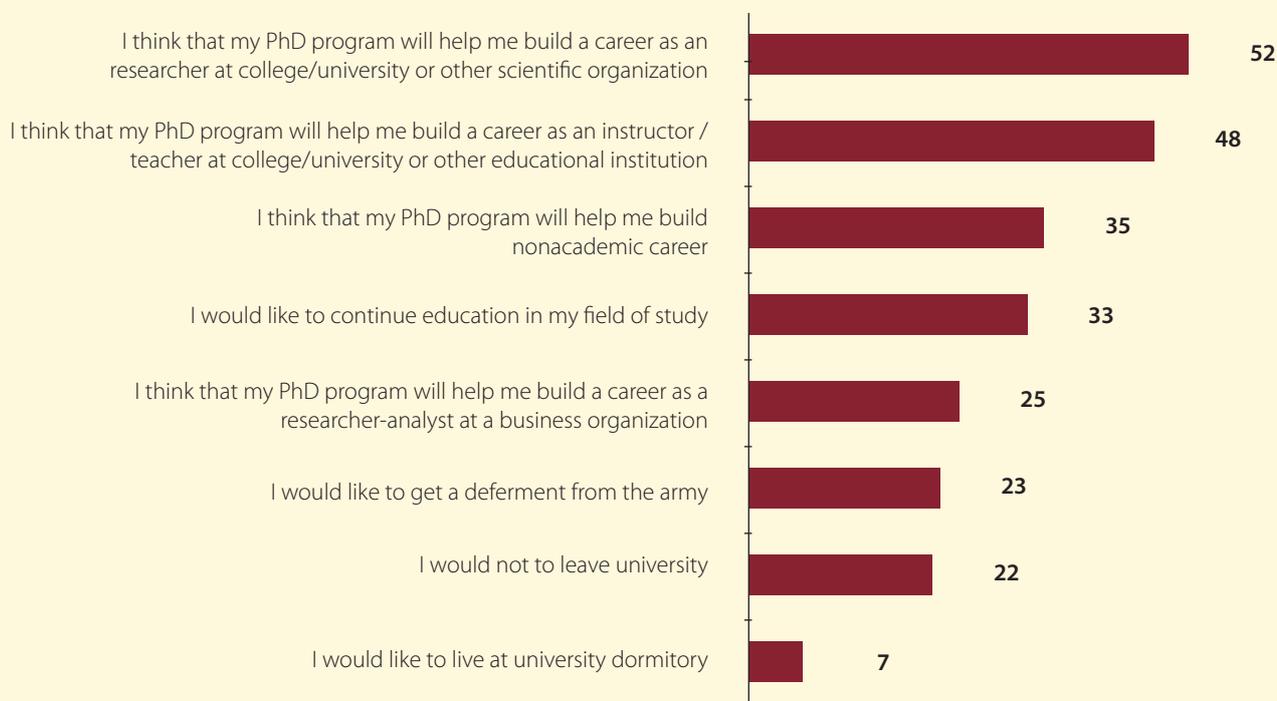


Figure 2. Reasons to apply for a PhD program

It is remarkable that 26% of the respondents did not choose reasons related to the development of an academic career (research and teaching), and 18.6% did not choose neither one of the abovementioned reasons nor a desire to work as an analyst-researcher in a business organization. This shows that career plans of about every fifth doctoral student do not match the goals of PhD education.

To conclude, as our data has shown, the existing admission policy to Russian PhD programs does not help select only those with strong academic goals and motivation to do research. Today, admission is mostly based on the results of entrance examinations and does not take into consideration the candidates' motivation and experience. Giving these aspects more attention would probably help increase PhD education completion rates and doctoral students' research productivity by means of more efficient selection. Such changes in combination with better educational and career guidance policies on PhD programs would result in improving doctoral programs output and, consequently, increasing Russian research outcomes.

Notes

[1] *Low efficiency of Russian PhD programs refers to a small number of highly qualified PhD graduates of these programs that are able to enter the international academic community and be successful in academic profession. Indirect indicators of this are productivity and publications of younger Russian scientists, both of which are significantly lower than in developed countries.*

[2] *The data was gathered and provided by HSE Centre for Institutional Research.*

Life after PhD: What Careers Do PhD Students in Russia Consider?

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With the new Federal Law on Education introduced in Russia in the late 2012, postgraduate training became the third level of higher education. The framework of PhD education has changed. Before 2013, doctoral education, which was one of the systems that had been inherited from the Soviet period, was officially considered as a track to academia, while now it works in a wider scope of highly qualified personnel training. But does this mean that the days when it was thought that all PhDs should become academics are gone? We have addressed this question to PhD students themselves and are reporting data from a recent survey conducted by Higher School of Economics' Centre for Institutional Research in several Russian universities this spring. Thirteen Russian universities participated in the survey administrated online. Most of them are considered to be leading institutions of higher education in Russia. Overall 2221 students from different fields filled in the questionnaire (26% representing social sciences, 8% – education, 28% – mathematical and natural sciences, 12% – humanities, 26% – engineering and technological sciences). 51% of the respondents were males, 16% were part-time students. We asked the respondents about their future career plans, their willingness to find a job at their home university or to continue studies abroad. We counted weighted average for all indicators to neutralize the differences in size of the institutions in the sample.

Academic and Alternative Careers of PhDs

Slightly more than half of the sample reported about their plans to pursue a career in academia: 26% would like to get a teaching position and 28% are willing to work as researchers. Among those who choose an alternative track 13% are going to do analytics and research for private companies, 10% would like to try themselves in the sphere of public administration, 9% choose entrepreneurship, 8% would take any job in the private sector not related to research and the remaining 6% would either become freelancers or did not have specific career plans at the time of the survey.

Two important conclusions can be drawn from this distribution. First, there are still plenty of PhD students who would like to enter an academic market, which is nowadays becoming more and more complicated in terms of employment. It may be an effect of the sample that represents mainly leading universities. But the fact that a quarter of PhDs see themselves devoted to teaching remains surprising, taking into account that there is a widespread discussion on reorientation from teaching to research at these institutions. Second, those who are going to do research outside academia are a minority in a group of students who consider an alternative career. Do people who don't plan to do research find doctoral education useful for their future employment? Do they have any other reasons to "stay at school" or are they just wasting their time? Anyway, a significant proportion of PhD students without orientation towards research as a job makes us wonder. We would like to take a look at discipline differences in career plans to comment more on these issues.

Disciplinary Differences

The sample includes only five groups of disciplines but they show great variation of results. Humanities and education lead by the percentage of students who would like to get teaching positions – around 60%. This track is twice less popular among those in the field of social sciences (27%); it is very rarely considered in mathematics and natural science (15%) and engineering (12%). Due to a big proportion of future “teachers”, humanities and education programs have the largest shares of those who are going to pursue an academic career. The highest percentage of young people who see themselves as academic researchers is observed among math and natural sciences students – 44%, followed by engineering (29%), humanities (21%), social sciences (16%) and education with only 12% of PhDs oriented toward research in academia. As for the research for private or public sector, around 20% of natural sciences and engineering students are going to get on this track, while it is not considered at all by those studying humanities and education sciences. Social sciences are in the middle with 11% of non-academic researchers. Alternative careers are overall more often considered in engineering and social sciences (59% and 57% respectively).

Academic Mobility and Academic Inbreeding

It is quite surprising that the share of students who would like to work at their home university is a bit higher than of those who are academically oriented (60% against 54%). It can be interpreted in several ways. For example, PhDs can pretend to take administrative positions besides academic ones or some of them may consider working at university as a second job. Anyway, data gives us reason to assume that the level of readiness for professional mobility among PhD students is not high. Most of them would prefer academic inbreeding rather than mobility. As for differences by discipline, they are not that notable but still persist. In the humanities 76% of the respondents wouldn't at all mind staying at their home university, while in the sphere of social sciences and education the shares are 69% and 67% respectively. For math and natural sciences together with engineering this indicator is about 50%.

However, the situation with academic mobility is not entirely bad. Slightly over a third of the respondents reported that they would like to continue their studies abroad and get a PhD in a foreign university after completing their program in Russia. At the same time, 26% weren't even thinking about this option. In this respect, we don't observe any significant differences by disciplines: this share ranges between 33% and 38% across all fields.

Measures to Consider

To sum up, in some disciplines – particularly in math and natural sciences and engineering – the amount of PhD students considering career tracks alternative to academic is not that small. Should educational policy on doctoral education somehow react on this? We believe that there are at least two measures to think of. First is the development of a system that could afford getting feedback from

employers outside of academia about their professional requirements to job applicants. Working with this information and taking it into the account in the process of PhD program design could bring PhDs' expertise closer to the market demands. As far as we know, such a system is now being implemented for bachelor's and master's education. PhD level should be in this line too. Second is setting career services for doctoral students. In our view, the relatively low share of those who consider research tracks outside academia can be related to weak awareness about where research skills can be applied. Career services for PhDs could promote R&D careers in private or public sector by seeking and offering vacancies for such positions.

Another issue worth mentioning is a rather big share of students who consider completing a PhD abroad. It would be naïve to think that all of them will really enter foreign universities but we expect that this track will become increasingly popular. It is another direction where career services could be developed, supporting students with information, advice, etc.

Educational Doctoral Programs at the Faculty of Economics of Moscow State University

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Moscow State University's Faculty of Economics has a long standing tradition of training young researchers. Over 300 people were studying annually towards doctorate and higher doctorate degrees in 6 research specializations: Economic Theory; Economics and Management of the National Economy; Finance, Monetary Circulation and Credit; Accounting and Statistics; Mathematical Methods in Economics; International Economics. There were about 10 dissertation councils opened, and there were nearly 100 dissertations for a PhD (Russian Candidate of Sciences degree) or higher (Russian Doctor of Sciences degree) academic degree defended every year. PhD programs were not included in the system of higher education; they were considered as postgraduate professional education. It was usually no more than 20% of all PhD students who would succeed in their studies by defending their dissertations within the prescribed time limits, i.e., within a year after the end of their PhD program. External doctoral candidates were rather common too: these people who worked

on their dissertations individually, without attending obligatory classes, but under guidance of a research supervisor. Since a new law “On Education” was adopted in Russia in 2012, MSU Faculty of Economics – just like many other educational institutions and the education system on the whole – faced the challenge of developing a new system that would ensure efficiency both in terms of quality of PhD dissertations and the number of dissertations defended within the established deadline. It is important to understand that on the one hand, the new system was expected to adjust to existing practices (requirements, procedures) of preparing and defending PhD dissertations, but on the other hand, it had to be in line with the federal higher education standards because PhD programs had become a new (the third) level of higher education.

It is worth noting that the new federal standards for doctoral programs stipulate that PhD education is mainly aimed at training specialists who would not just carry out research but become teachers in their respective professional areas too; moreover, graduation from a doctoral program now leads to the awarding of “Researcher / Instructor-Researcher” qualification.

Unfortunately, for now we cannot discuss the results of the ongoing reforms because the first students admitted under the new rules will only graduate in 2017. However, we can discuss some interim results. In practice the development of the new model of doctoral education is not unproblematic – both in terms of contents and organizational issues. We will highlight some of them.

It is interesting to mention that different organizations took different approaches to the new challenges. For example, institutes of the Academy of Sciences are sticking to their tradition of viewing doctoral programs as aimed at only training researchers. Educational organizations with their specific experience believe it is rational to train PhD students both as future researchers and teachers. However, priorities in terms of time spent on research training and teacher training vary across different programs.

MSU Faculty of Economics’ doctoral program is aimed at preparing PhD students both for teaching and research. Therefore their obligatory curriculum includes not only such disciplines as “History and Philosophy of Science” or foreign language but two other courses as well: “Contemporary Research Methods” and “Developing and Implementing Educational Programs Under Federal Higher Education Standards.” These courses allow the students to discuss the most topical conceptual and methodological issues in the sphere of teaching and research.

Besides that, internships and research are major parts of doctoral education. The main principle that is considered to be useful at the doctoral programs of MSU’s Faculty of Economics is engaging PhD students into real research and educational projects.

During their studies, each PhD student has to fulfil two internships, amounting to the total of 60 ECTS: a research internship and a teaching internship. The value of both has to be at least 24 ECTS. The choice of how to get the re-

maining 12 ECTS is left to the student and depends on his/her preferences. Each student’s specific tasks, their workload, and deadlines are set by their research supervisor and reflected in their individual curriculum. Students have to report at the end of every semester by presenting research notes and other materials they have prepared (reviews, articles, empirical data, etc.).

Special attention is given to the contents of students’ doctoral research. According to the syllabus of the methodology seminar, during the first semester students’ proposed research topics have to be discussed and approved (they discuss the relevance of their research, their research aims and goals, the choice of methodology, etc.). In the sixth semester the students discuss and present their results at a PhD completion seminar. Besides that, students have to take part in professorial research workshops, which normally have between 5 and 12 participants, each of whom gets an individual task. At the end of the workshop each student has to prepare presentation of an article (report), which, after being subjected to reviewing procedure, can be published in one of the faculty’s journals, in the proceeding of the annual Lomonosov International Conference (Lomonosov Readings) or in other journals.

Moreover, it is obligatory for every PhD student to attend a seminar on teaching methods in their special discipline. Such seminars are aimed at customizing existing methods and tools of general syllabi and curricula development according to the students’ specific research areas. At the end of the seminar each student has to present research notes and other materials they have developed.

The development and implementation of educational PhD programs bears some issues related to the distribution of responsibilities and the coordination of cooperation between faculties, departments and dissertation committees. MSU Faculty of Economics currently consists of 21 departments and includes 8 dissertation councils. Educational programs function as a result of cooperation between 2 (Accounting and Statistics; Finance, Monetary Circulation and Credit) to 13 (Economics and Management of the National Economy) departments. Each department is involved into developing 1-3 educational PhD programs. Therefore, such programs are de facto interdepartmental. This means that they need to be institutionalized as interdepartmental structures and that the responsibilities of all parties have to be specified, including the responsibilities of the faculty which serves as the centre that enables the functioning of educational programs, departments and dissertation councils.

Interdepartmental cooperation takes place in the course of organizing research workshops focused on the topical research questions that the faculty is busy with. Students representing different departments and disciplines participate in such workshops. Departments remain responsible for their students’ individual research process and for helping them organize research and teaching internships.

The issue of PhD students’ final assessment remains one of the most controversial and debatable ones. According to the federal higher education standards, there are two forms

of final assessment: state examination and defense of one's graduation thesis – the latter becoming a recommendation for the student to proceed to the dissertation committee. However, several questions that need to be answered arise:

- What is state examination? What are its goals? How is it organized? If it is aimed as a means of proving one's qualification as "Instructor-Researcher," wouldn't it be more logical if students would rather develop and defend their own teaching aids based on their own research?
- Does the new final assessment procedure contribute to the goal of improving the quality of PhD dissertations and the number of dissertations defended within the prescribed time limits? What are the differences between state examination commissions and dissertation committees in terms of how they are formed and in terms of requirements to their members? Aren't we creating additional administrative barriers and transactional costs?

Sources:

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Call for Proposals

Douglas Proctor (Melbourne Centre for the Study of Higher Education) and Laura Rumbley (Boston College Center for International Higher Education) are pleased to launch a call for chapter proposals for an edited collection focusing on next generation perspectives on the internationalization of higher education. The title for the volume Future Agenda for Internationalization in Higher Education: Next Generation Insights into Research, Policy, and Practice. As part of Routledge's "Internationalization in Higher Education" series, this book will focus on new contexts for internationalization in higher education, new topics of enquiry, and new or innovative modes or methodologies of research. As the title suggests, the book will also give primacy to next generation perspectives from emerging researchers and analysts.

The call for proposals and key timelines are now available online at www.nextgenizn.org. This website also contains background information about the rationales for the book and its structure, as well as bios for the editors.

Proposals due October 10, 2016
(special extended deadline for HERB readers)

About HERB

Higher Education in Russia and Beyond (HERB) is a quarterly informational journal published by National Research University Higher School of Economics since 2014. HERB is intended to illuminate the transformation process of higher education institutions in Russia and countries of Eastern Europe and Central Asia. The journal seeks to adduce the multiple-aspect opinions about current challenges and trends of regional higher education and give examples of the best local practices. Our audience represents wider international community of scholars and professionals in the field of higher education worldwide. The project is implemented as part of cooperation agreement between Higher School of Economics and Boston College Center of International Higher Education.

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