

Three challenges to Russian system of doctoral education: Why only one out of ten doctoral students defends thesis?

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Abstract

This paper is aimed at providing evidence on the experience of doctoral students at Russian universities in the era of significant institutional changes related to the shift from the “master-apprentice” model of doctoral education to the model of structured doctoral programs. Based on the results of a cross-institutional online-survey of doctoral students ($N = 2,034$) conducted in 16 leading Russian universities, three main barriers to the completion of doctoral programs were distinguished: (1) poor supervision, (2) lack of financing and forced need to have a paid job, (3) tough requirements and a lack of competences to fulfill them. We argue that the institutional transformations, which were implemented in the last seven years, did not solve these problems, and more efforts should be done to enhance the development of doctoral programs in Russian universities in order to overcome the modern crisis of doctorate in Russia.

Keywords

Doctoral programs, student experience, student attrition, barriers to completion of doctoral programs

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Introduction

Doctoral education in Russia demonstrates extremely low completion rates. According to the official statistics, in 2019 only 10% of doctoral graduates defended their theses during

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the expected period. Moreover, during the last 7 years there is a prominent trend related to the decrease in the percentage and numbers of doctoral graduates who defend their theses (Bekova, 2019). Such a situation produces a significant risk for the sustainable national development in the era of knowledge-based economy, when critical mass of highly qualified workers plays essential role in social and economic processes (Nerad, 2006). Intention to reduce this risk inspired academic and expert discussions around the causes for low effectiveness of doctoral education and ways to overcome them (Kobzar & Roshchin, 2020; Maloshonok & Terentev, 2019a, 2019b; Terentiev et al., 2018). One of the main aspect of these discussions is related to the analysis of major institutional transformations implemented in Russia during the last eight years and their role in the current crisis of doctoral education.

Doctoral education in Russia is currently redefining its goals and organizational models (Maloshonok & Terentev, 2019b; Yudkevich et al., 2020). In line with global trends, it made a step towards the transition from “master-apprentice” model of doctoral education towards the model of structured doctoral programs. On the one hand, this transitional period is explained by the influence of some global trends, such as internationalization (Halse, 2007; Nerad, 2006; Nerad & Evans, 2014), and spread of liberal ideas and the discourse on productivity in higher education (Olssen & Peters, 2005; Zepke, 2015). On the other hand, transition to the model of structured doctoral programs has been instigated by the national education policy in training academic workforce and the adoption of two laws, the revised Law On Education, which came into force in 2013 and changed both the formal status of doctoral education and the doctoral curricula, and the revised Regulations on Awarding Academic Degrees, which came into force in 2014 and tightened the requirements for admission to doctoral studies. That is to say, the global trends and national education policy are shaping conditions to which doctoral programs should respond by changing their curricula, student and faculty training requirements, on the one hand, while on the other such newly emerging conditions create limitations for reforms and qualitative improvements in doctoral education.

The reformation of Russian doctoral education has been discussed in scientific literature (Bedny, 2017; Bedny et al., 2017; Kobzar & Roshchin, 2020; Maloshonok & Terentev, 2019b). In particular, scholars raise questions about the falling (since 2013) completion rates (Bekova, 2019), legal differentiation between defending a thesis and earning a certificate of the completion of a doctoral program (Bedny et al., 2017), increased doctoral student workload (Bekova & Dzhafarova, 2019), ineffective procedures of doctoral students enrollment and problems of transition to the model of structured doctoral programs (Maloshonok & Terentev, 2019a), ambiguity of goals and content of doctoral training (Kobzar & Roshchin, 2020). It should be admitted that many of the existing doctoral education issues - such as high attrition rates, challenges associated with academic writing and ensuring research productivity, financial support, and the match between doctoral graduates' skills and employers' requirements - occurred before the transition period. However, they have grown more acute following the transformation of doctorate and tightening of doctoral student requirements and now need to be urgently addressed and tackled (Maloshonok & Terentev, 2019a).

This paper is aimed at providing the empirical evidence on the main barriers that challenge the development of doctoral programs at Russian universities in the era of institutional transformations. While the movement toward the structured model of doctoral education is a global trend, the Russian case is of global interest and can be seen as symptomatic for other countries, which experience the same institutional transformations.

Overview of PhD education in Russia

In the last 7 years, doctoral education in Russia experienced serious transformations. With the new Federal Law “On Education in the Russian Federation,” doctoral programs became a third level of education, which implied a shift from the “master-apprentice” model of PhD training to the model of structured doctoral programs. This shift entailed a series of transformations, both in the essence and organization of doctoral education. Among the most prominent changes was the dramatic increase in the volume of the organized coursework and tougher requirements for PhD candidates. While previously PhD students had to attend only three obligatory courses in history and philosophy of science, foreign language, and area of specialization that should be completed during the first year of PhD training, the new model implies that PhD students should attend a large number of classes (mainly in the area of their specialization) during the first 2 years of their study and complete research and pedagogical internships. Since 2013, prior to the defense, PhD students should have no less than two or three publications (depending on their field of study) on the topic of the dissertation, compared to one or two publications before 2013.

The reforms have exposed old issues of doctoral education in Russia. The first issue is an excessive state control of doctoral education on many levels. The state provides rules and requirements for studying process and defense, controls universities and scientific institutes, allocates financial support and so on. Besides universities and scientific institutes have no right to award someone with the degree, this right belongs to state Higher Attestation Committee (HAC).¹ Such control forms an inert system that is limited in solving problems without external interference.

Second issue is low financial support. The scholarships for doctoral students are 5–10 times less than the average income, while there are practically no other sources of funding (Martynova & Ratai, 2019). Despite the fact that the majority of the PhD positions are funded by the state budget (67.3% at universities and 84.8% at scientific institutes) (Berezina, Vasilyeva, Lebedev, Pluzhnova, Prokhorova, Fedin, 2018), support for PhD students is insufficient and many of them are forced to work (Bekova, 2019).

The low completion rate is the third problem. The share of Russian PhD graduates, who did not defend their theses, within the expected period, has been steadily increasing since 2007 and in 2019 was 89.6% (Federal State Statistics Service, 2020a). In addition, over the past few years, the number of doctoral students in Russia has been steadily declining (the global trend is reversed), as well as the proportion of young people who go to doctoral programs immediately after graduation (Federal State Statistics Service, 2020a). In such conditions, the high dropout rate raises the problem of replacement and recruitment of research and teaching staff. Average age of university staff in Russia is constantly increasing, and the share of employees over 60 years is steadily growing (Gusev, 2015). The ageing of the teaching staff together with the outflow of highly qualified staff from the academic sector can be a significant risk for the higher education sector.

Currently, about 84,000 students are enrolled in doctoral programs in Russia. PhD programs last for 3 to 5 years depending on the form and field of study (3 years for full-time PhD students in social sciences and humanities, 4 years for full-time PhD students in engineering, math, and natural sciences; for part-time students, it increases to 4 and 5 years, respectively). Dissertation defense is not mandatory upon completion of a doctoral program. Currently, out of about 15,000 students who complete the programs annually, only approximately 1600 defend their dissertation on time (Federal State Statistics Service, 2020a). However, all students who successfully pass the exams and complete their 3–5 years of study receive a diploma

that certifies them as a researcher and lecturer. In order to receive a PhD, they need to defend the dissertation.

Methods and data

This paper is based on the data from an online-survey of doctoral students conducted at sixteen Russian universities in 2016 on behalf of Russian Ministry of science and higher education. The goal of the survey was to provide the policy-makers on both national and institutional levels with complex picture of doctoral students' views on their study, barriers to the completion of doctoral programs and plans after the completion of their study. The targeted sample included the leading Russian universities that participate in the Russian Academic Excellence Initiative (Project 5–100)² and federal universities,³ since their experience can be seen as symptomatic for other universities. The sample consists of 14 universities (twelve Universities participating in the “5–100” program and two federal universities) with about 40% of all Russian doctoral students enrolled in their programs. 2,034 PhD students participated in the survey (25% of all PhD students studying in selected universities, N=8,136). Participation in the survey was voluntary. The response rate varied from 11% to 53% in different universities. Respondents from all fields of study and years of study took part in the survey. Main characteristics of the sample are presented in Table 1.

Barriers to the completion of doctoral programs at Russian universities: Main findings

Based on the results of the conducted online-survey three main barriers to the completion of doctoral programs at Russian universities could be distinguished: (1) poor supervision,

Table I. Main characteristics of the sample (N = 2034).

Characteristics	%
Year of study	
1st	39
2nd	32
3rd	20
4th	9
Field of study	
Math and natural sciences	30
Humanities	9
Engineering and technological sciences	30
Social sciences	26
Education	4
Gender	
Male	55
Female	45
Form of education	
Full-time	88
Part-time	12
Form of financing	
State-funded	85
Commercial	15

(2) lack of financial support and forced need to have a paid job, and (3) tough requirements and a lack of competences to fulfill them. Next, we will discuss these barriers more precisely.

Poor supervision

The model of dyadic supervision when a supervisor is the only or at least main person who provides academic support to doctoral students, as well as controls the fulfillment of the program requirements, is still dominant in Russian doctoral education (Gruzdev et al., 2020). Previous studies showed that such a model has significant drawbacks related to the higher risks of academic isolation and insufficient advising, which results in higher risks of doctoral students' failure (Barnes et al., 2010; De Valero, 2001).

In Russia, the drawbacks of dyadic model of supervision can be even deeper than in other countries because of some specifics of national context such as tough requirements for doctoral graduates, and lack of rewards for supervisors. During the doctoral journey, doctoral students should not only conduct research and write a thesis, but also prepare a number of publications (at least three) in high quality journals. To help with meeting these requirements and provide strong academic support to doctoral student supervisors should perform a wide range of functions and spend a huge amount of time on supervision. However, the existing incentives are insufficient for quality work. Consequently, supervisors face a dilemma: whether to do their job poorly or to do it well and spend on supervision extra time at the expense of time on other professional activities.

More than 20% of doctoral students, who participated in the survey, reported that they experienced problems in communication with their supervisors.⁴ Depending on the area of specialization the most problematic category was doctoral students who study on programs in education (29% of them reported about problems in communication with their supervisors) with 17% to 24% of those, who reported about difficulties among other specializations ($\chi^2 = 27.719$, $df = 15$, $p < .05$). Another 'group of risk' are senior doctoral students: 25% of doctoral students who study on third and fourth year of their study reported about difficulties in communication with a supervisor compared to 18% and 21% among those, who study on first and second year ($\chi^2 = 16.327$, $df = 9$, $p < .05$). At the same time, the role of supervisor is especially important during the final stages of the doctoral program when he/she should help doctoral scholars to go through the highly bureaucratized academic agree awarding procedures (including help in finding reviewers, organizing the pre-defense and defense procedures etc.).

The results of the survey also show that many supervisors do not perform the administrative and social support to doctoral students, and do not help in preparing the publications that are usually seen as the most challenging aspect of doctoral study (see Table 2). Moreover, the results showed that about 16% of doctoral students, who participated in the survey, reported that their supervisor practice the so-called hands-off approach (do nothing or almost nothing to help doctoral student) during the doctoral journey (see more in Gruzdev et al., 2020). However, about two thirds of those, who reported that their supervisors perform hands-off approach, are still satisfied with them. We assume that this finding can be explained by the so-called disengagement compact between doctoral students and their supervisors: both sides do nothing and satisfied with each other (see Kuh, 1999, 2003). The causes of such a phenomenon may lie in the specifics of recent institutional transformations in Russian higher education related to strengthening of accountability (Huisman & Currie, 2004; Trow, 1996), which resulted in the increasing of both doctoral students' and supervisors' workload. Consequently, the weakening of doctoral supervision may be the result of a spontaneous adaptation of PhD students and supervisors to the new reality when supervisors have more

Table 2. Functions performed by the supervisor (as reported by doctoral students).^a

	% of respondents
Recommends literature and research on the subject of the dissertation	80%
Recommends experts with whom to communicate on the subject of the dissertation	49%
Organizes interaction with experts to discuss various tasks and issues	33%
Helps in the organization of the field research	32%
Gives advice concerning the research methods	67%
Comments on results and conclusions	84%
Edits the text of the dissertation	47%
Edits the text of articles	64%
Informs students about scientific events related to the topic of the dissertation	63%
Helps to prepare publications	69%
Helps in finding reviewers	43%

^aQuestion: Which of the following does your supervisor perform? Respondents could choose all appropriate answers.

time for their own research and publications, and students, particularly those who are not motivated to complete their dissertation, can avoid being excluded from the program.

Lack of financing and forced need to have a paid job

Another serious barrier for completion of doctoral programs in Russian universities is related to the lack of funding for doctoral research. While the size of government scholarships is very small, most doctoral students are forced to have a paid job.

The results of the survey show that almost 90% of doctoral students have paid work, and for 80% of them it is the main source of income. The most common mode of employment (34% of the respondents) is full-time work outside the university. 58% of students working on campus are engaged in various kinds of research and another 43% work as instructors. Of the PhD students who are employed outside their university, the largest share hold non-academic positions with corporate entities (38%). Only 17% of the respondents indicated that they have a research position outside academia.

There are significant differences in employment options among students studying in different fields. There are more researchers among those who study for a PhD in Math and Engineering (75 and 62%, respectively), while the majority of doctoral candidates in Education (70%) are employed in teaching and instruction. A significant portion of those who pursued a doctorate in Social Sciences (35%) and Humanities (38%) have reported to hold various administrative positions.

For about half of doctoral students a paid job does not relate to the work on dissertation. As a result, in most cases, the need to combine education and paid work has negative consequences on the scientific productivity of doctoral students. Forty-seven percent of doctoral students who have paid work noticed that because of the work, they have a lack of time to do research, and only 30% did not experience this problem.

Tough requirements and a lack of competences to fulfill them

In order to defend a thesis, doctoral candidates are required to publish results of their research in peer-reviewed journals. The number of these articles was increased and today doctoral students have to have no less than two or three (depending on the field of study)

published papers. The articles have to be published in specific journals, the list of which is determined by HAC. As of the end of 2018, there were 2312 journals on the list of VAK.

The publication process of each manuscript can take a long time and requirements to have 2–3 publications means that doctoral students have to publish one paper per year. These demands can be difficult to meet. Moreover, sometimes universities put additional intermediate criteria for the attestation of doctoral students that aggravate the problem. This situation is common for the universities who received a right to award their own degrees.

The data from the survey shows that more than a half of doctoral students experience problems with the publication of manuscripts in the journals. 54% of doctoral students had troubles with publishing papers on their thesis subject. The share is significantly higher among doctoral students in educational sciences (60%), social sciences and humanities (59%).

Conclusion and discussion

The Russian system of doctoral education experienced dramatic institutional changes in the last eight years related to the shift from the master-apprentice model to the model of structured doctoral programs, and tightening of the requirements to academic degree holders (Maloshonok & Terentev, 2019a). Such a shift toward a new institutional model was aimed at finding a more effective way of preparing highly qualified workers for a knowledge-based economy. However, it did not solve all the issues of the previous model. Based on the results of the cross-institutional online-survey of doctoral students at leading Russian universities we distinguished three main barriers that challenge the development of doctoral programs in Russia.

The first problem, which was identified in the survey, was the problem of poor supervision. The model of dyadic supervision when a supervisor is the only or at least the main person who provides academic support to doctoral students and helps to complete their educational program is still dominant in Russia (Gruzdev et al., 2020). Only a few universities practice the system of shared supervision, when each doctoral student is assigned to two or more supervisors. Meanwhile, the dyadic model suggests a high degree of doctoral scholar dependency on student-supervisor relationships, motivation and qualification of a supervisor, and his/her engagement in doctoral scholar research (Barnes et al., 2010; De Valero, 2001). However, the results of our survey show that the significant share of supervisors does not perform some important functions and do not invest the expected level of time and efforts on providing the academic support to doctoral students. Moreover, 16% of doctoral students reported that their supervisors do nothing (hands-off supervisors). In this situation the movement towards the model of team (or shared) supervision which showed its effectiveness in a number of empirical studies (Ives & Rowley, 2005; Mastoras & Andrews, 2011; Pyhältö & Keskinen, 2012; Pyhältö et al., 2015; Riva & Cornish, 2008) could be beneficial.

The second systematic problem of doctoral education in Russia, which was identified in the survey, is the lack of financing that leads to the situation, when doctoral students are forced to have a paid job, which often does not relate to the dissertation. Despite the fact that many problems are based on systemic underfunding of higher education, it is possible to take steps at the university level to fix the situation. Thus, survey results showed that the place of employment is more important than the workload: doctoral students who work full-time on-campus experience fewer problems than those, who are employed off-campus, even part-time (Bekova & Dzhafarova, 2019). Studies also showed that place of employment not only shapes doctoral students' experience during their study but also is significantly related to chances to defend the thesis (Bekova, 2019). In order to support and keep doctoral

students, universities often employ them at administrative or teaching positions, but this is not always helpful for their results. A number of universities have various support mechanisms (scholarships, support for academic mobility, etc.). An important initiative was the launch of a special grant program for doctoral students by the Russian Foundation for Basic Research. However, all these initiatives are limited. A possible option in case of limited support from the university is to develop doctoral programs in cooperation with industry. The R&D staff outside the University can work as co-supervisors, develop joint research projects, and hire doctoral students.

The third problem refers to the tough requirements for PhD candidates and a lack of competencies to fulfill them. Increasing demands to doctoral students were the government reaction to growing academic misconduct. But these requirements are unlikely to have the expected effect without developing effective student support tools. Granting greater autonomy to universities can make a positive contribution and help to solve the problem associated with the insufficient publication activity of doctoral students. The flexibility in the requirements for the awarding of academic degrees, together with the introduction of special training courses and events aimed at development of research skills, could be beneficial. One of the promising initiatives in this direction is the program of providing the leading Russian universities with the opportunity to award their own academic degrees equivalent to those awarded by the Higher Attestation Commission. Universities that received this opportunity have the right to independently determine the regulations and requirements for the defense procedure and are responsible for the quality of the process by their name and reputation. Another good practice is the track “PhD by publications”. Applicants who choose this track can earn a degree based on the published articles in high quality journals without the obligation to write independently the text of dissertation. In addition, better use of the structured model potential can allow the formation of research skills, often not formed at previous levels of education.

Overall, further empirical research should be done to analyze the main barriers to the development of doctoral programs at Russian universities and ways of their overcoming, which will create the foundation for the evidence-based educational policy.

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Notes

1. After 2016, some universities got a right to award doctoral degrees without external approval and to set their own rules and procedures but the number is very limited.
2. Academic excellence initiative, which was introduced in 2013 to maximize the competitive positions of Russian universities in global university rankings. Twenty-one university participate in this initiative. To see more: <https://5top100.ru/en/about/more-about/>
3. Government program, which was launched in 2009 and implied the creation of five big universities with special status and funding on the basis of regional educational and research centers. To see more: Schiermeier, Q. (2010). Russia to boost university science. *Nature*, 464, 1257.

4. Question: Which of the following factors hinders your doctoral study? - Difficulties in communication with my supervisor.

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