COVID-19 and Final (State) Examination: Strategies of International and Russian Universities

Abstract: COVID-19 pandemic has changed the functioning of all levels of education systems. Schools and universities had to quickly adapt and change their procedures according to conditions created by the epidemic. Long perceived as additional and backup solutions, different distance learning technologies, particularly internet-based, became the main solution for the continuation of education.

on all levels. Several issues have stood out particularly with this seismic change – one of those is the issue of final examinations in universities. This issue is especially crucial in Russia, where the successful passing of a state final examination, which combines majority of the topics from the study program, is a prerequisite for graduation. This paper aims to analyze and present different strategies which were used for final university examinations in different countries and universities of the world and compare it with the Russian practices.

**Keywords**: COVID-19, higher education, final exams, state final attestation, examination.

**Introduction**

The spread of coronavirus infection has become a challenge for many universities in Russia and worldwide – they had to establish rules and procedures for remote study and work, make changes to educational programs, introduce new technologies and rules, solve issues with habitation of students and plan for unpredictable admissions period, among others. However, one of the particularly difficult issues to be solved in Russia was the issue of final examination.

The particularity of the issue stems from the nature of senior-year final exams, called “state final attestation”. The successful passing of this attestation is a prerequisite for graduation from any higher education institution in Russia – such stipulation is mentioned in the para. 3 of art. 59 of the Federal Law No. 273-FZ of December 29, 2012 “On Education in the Russian Federation” (hereafter the “Law on Education”).

The procedure for conducting state final attestation is articulated in the Order of Ministry of Education and Science of Russian Federation No. 636 of 29 June 2015 “On Approval of the Procedure for Conducting State Final Attestation for Educational Programs of Higher Education – Bachelor’s Programs, Specialist Programs and Master’s Programs” (hereafter the “Procedures”). Para. 2 of said Procedures articulate that “State final attestation is conducted by state examination commission in order to determine the compliance of the results of the student, who has mastered the study programme, with the requirements of Federal State Educational Standards”. Para. 10 additionally stipulate 2 modalities in which, jointly or separately, such attestation can be conducted: thesis defense and final examination. The concrete modality of state final attestation can be chosen by the higher educational institution itself, with regards to the requirements of Federal State Educational Standard for the particular direction of study, e.g. jurisprudence or mathematics. State examination consists of a written or oral exam, which can cover from one to several subjects, which are deemed to be “decisive for the future professional activity of future graduates”.

These exams combine the majority, if not all, major topics covered by the study programme, or focuses on specific broad areas of knowledge within the programme.

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2 Para. 11 of the Procedure for Conducting State Final Attestation for Educational Programs of Higher Education - Bachelor’s Programs, Specialist Programs and Master’s Programs (adopted by the Order of Ministry of Education and Science of Russian Federation No. 636 of 29 June 2015).
These final exams are notorious for their difficulty and students are expected to spend several weeks preparing for them. It was evident that the traditional oral, or, in case of some universities, written examinations would not be permitted to be conducted physically – unlike in some European countries, like Belgium, where the summer examination period coincided with the easing of restrictions and permitted some universities to conduct mass written examinations in spaced-out halls. Failure to pass these exams consequently means automatic expulsion from the university, as stipulated in the para 41 of the Procedure. However, students have the opportunity to retake the examination up to five years after their first attempt, but lose their student status. Therefore, the stakes cannot be higher for graduating Russian students.

The final attestation itself has to be conducted by a state attestation commission, which has to be made up by the university a month before the date of the first exam. The chairman of the commission has to be nominated by the university and be either a representative of a professional community or an academic with a doctoral decree of a title of professor. In any case, the chairman should not work in the university itself. The number of commissions can vary – while a master programme can have one commission, big faculties can field upwards of ten or more, which can correspond to particular study tracks available within the study programme. As can be seen, the process of organization of the state attestation is a lengthy one and had a lot of caveats that has to be followed by the administration of faculties and universities.

Therefore, ways and means for successful organization of such exams had to be devised and tested. It also should be noted that the cancellation of exams or thesis defense is permitted in case if Federal State Educational Standard permits so, which was pointed out by the Ministry of Higher Education and Science on the onset of the exam period. Additionally, universities under the Ministry have been ordered to conduct the state exams online – this order, however, does not apply to universities under the Government of Russian Federation, under other Ministries and universities.

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Para. 23 of the Procedure.

Para. 22, 24 of the Procedure.


Para 2.2. of Order of Ministry of Higher Education and Science of Russian Federation Nº 648 of 8.05.2020 “On the activities of organizations subordinated to Ministry of Higher Education.
with special status – Moscow State University and St. Petersburg State University – for them, it is only a recommendation.

This paper collects six different strategies identified in March-April 2020 during comparative research of the tendencies and solutions for distance examinations adopted in different universities worldwide or proposed and used in Russia and their relevance to the Russian legal situation and experience. Experience of different countries has been analyzed, including the United States, the United Kingdom, Italy, France, Singapore, and Russia. As “state final examination” is a feature of the post-Soviet university education system, the international comparison mostly concerned itself with final exams for the specific courses or on specific programmes. This research was originally intended to be a guide for different levels of university leadership to support their choice of modality of state final attestation in their universities or study programs, taking into account the viewpoints of different actors in the process – from students and professors to industry leaders. These strategies do concern themselves only with exams – while thesis defense is as susceptible to the issues that would be pointed out with regards to usage of online tools, the difficulty of overcoming them and risk of failure is not as big as for the examination – as thesis defense success is impacted by the quality of the work submitted in the first place. In addition, the risk of academic fraud is not so great during thesis defense, and special mechanisms will not be required to devise protection from it.

1. Strategy One – Conducting Oral Exams Online

The first strategy, which comes to the mind of anyone involved in the process of transferring exams to remote online format, is to faithfully reproduce the procedure without skipping a beat. In the Russian final attestation context this is achieved by exchanging a university room with the examination commission for a videoconference room with the same commission. This strategy was utilized by a significant number of universities in Russia: for example, this modality was announced as primary in the Moscow State University.

It also should be noted that this method is nothing but methodical recreation of “traditional” exam format online, which is easier to organize for the university, remains, at its core, an outdated one and is exacerbated by the lack of human contact, albeit from that on the screen. Therefore, it was pointed out that such “easy way out” is not particularly well-suited for the digital education.

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Representatives of several Russian universities have supported this thesis. For example, the Vice-Rector for Academic Affairs of the RUDN University, Alexander Efremov, believes that oral final exams are, largely, a remnant from the past, and their effective organization online is next to impossible\(^\text{10}\). For example, there is no method to make sure that the student is not cheating (without using specialized proctoring systems, which will be covered elsewhere in the text) as it is almost impossible to keep track of several students on the screen (traditionally, several students are preparing their answer while one of their colleagues answers to the examination commission) According to the rector of Bauman Moscow State Technical University, it is difficult to take oral exams due to the impossibility of creating the effect of presence, meaning lack of human contact\(^\text{11}\). Nevertheless, both of those universities have used this format.

Some universities and study programs in Russia, while conceding the pitfalls of this approach, had no other choice but to utilize this method – for example, language and translation exams must check the quality of the aspiring graduate's oral production skills. Some of those universities also employed audio recordings due for submission in a short timeframe to overcome bad sound quality and connection issues. As oral exams usage in Western universities is minor, there are no significant international practices that can be noted here.

2. Strategy Two – Proctored Exams

When conducting written exams in the online format (as well as, under certain assumptions, during preparations for oral exams, for example, in a foreign language) for prevention of academic fraud many universities can use the technology of online proctoring (from the Latin word “proctor” – follow, observe). Special employees – proctors monitor the progress of the exam, trying to stop or identify possible violations of the exam rules or instances of academic fraud. Online proctoring is implemented as monitoring the progress of an examination or preparation for examination by a proctor through a webcam and (or) the use of special proctoring software.

Online proctoring systems collect the following information:
- picture from a webcam;
- sound from the microphone;
- computer desktop image;
- characters typed on the keyboard.

11 Ibidem.
Before the start of the exam, technical specifications of the computer are usually analyzed, including the availability of remote access, installed second screens and availability of other features, which can theoretically allow the deception of the proctoring system. It also generally includes a mandatory identity check through pictures of students holding their ID and, in some cases, records of keyboard typing patterns.

Modern proctoring systems can record the following types of violations automatically:

- use of another application on the computer (some systems block access to other applications);
- use of any programs that allow remote access to a computer;
- use of extraneous equipment and books;
- looking away from the screen;
- absence or change of face in the frame, the presence of unauthorized persons and unauthorized sounds in the recording;
- various non-verbal communication with people outside the field of view of the camera.

These issues can be flagged for additional checks by a professor or proctor (in case the system uses so-called asynchronical proctoring, where not every student is being followed in real time).

Universities worldwide either utilize their own technical solutions for proctoring or contract proctoring companies, which develop such services for universities\textsuperscript{12}. Several prominent proctoring companies can be named, such as Proctor U\textsuperscript{13} or ProctorFree\textsuperscript{14}. Leading Russian companies are ProctorEDU\textsuperscript{15} and Examus\textsuperscript{16}, the latter of which was used by the majority of universities this semester. Some universities do have the possibility to create their own systems, as, for example, ITMO University, which uses their own open-source ITMO.Proctor system\textsuperscript{17}.

In addition to the usage of the system, special proctoring centers have been functioning in universities in the last decade in order to facilitate the conduct of remote exams, which, if existed, have been sparsely conducted comparing to the current numbers. For example, HSE’s Directorate for Online Learning Proctoring

\textsuperscript{12} See for example: University of Houston Proctoring Services, https://uh.edu/online/students/proctoring-students.php (15.06.2020) and Oregon State University Exam Proctoring, https://ecampus.oregonstate.edu/services/proctoring/ (15.06.2020).
\textsuperscript{13} ProctorU Services, https://www.proctoru.com/services (15.06.2020).
\textsuperscript{15} ProctorEdu Technology, https://proctoredu.ru/ (15.06.2020).
\textsuperscript{16} Examus, https://ru.examus.net/ (15.06.2020).
\textsuperscript{17} ITMO University. Proctoring: How to Pass Exams Online, https://de.ifmo.ru/?node=news&id=2161 (15.06.2020).
Centre specializes on entrance examinations as well as on academic contests, which grant admission to universities. According to the university, in 2019 more than 2,100 exams with proctoring were conducted for foreign applicants from foreign countries and abroad, 50 – for graduate students and approximately 1000 – for participants of the International Youth Olympiad.

Foreign experience demonstrates the widespread use of various types of proctoring on exams, including those carried out by the teacher. University of Bologna (it. *Università di Bologna*), located in one of the countries most affected by the epidemic – Italy, offers to use a simplified version of “live” online proctoring. Students, taking an exam, are invited to connect to an online conference at Microsoft Teams, complete a written exam by hand while being online with the camera on (with their hands and head not leaving the camera frame), and, after completing the exam, demonstrate and upload photos or scanned copies of written work to the professor in a given timeframe (around 15 minutes after finish). Similar methods are used in other Italian universities. This is an example of a basic technology, albeit in practice indistinguishable from a simple transfer of offline exams into online reality that can find application in universities that do not have access to technically sophisticated proctoring systems. Additionally, it is very undemanding on the computer capabilities of students.

Despite the almost guaranteed elimination of academic fraud during exams, proctoring systems, while being the favorite of “advanced” universities, have also been criticized the most. First and foremost, those systems usually require compliance with their system requirements, without fulfilling which, the system will just not allow you to sit an exam – this also extends to the speed of the internet connection and image quality. Understandably, not every student, be it at a university dorm or back home, necessarily has the hardware fulfilling those requirements, which leads to surprises on the exam day or the day before.

Additionally, the issues of privacy and data collection were raised by students in the USA, EU and Russia – different systems, according to students, in each of their respective cases, were infringing on the personal data of examinees from the mere fact of video recording to keeping records, including photos with ID numbers, for undisclosed periods of time which has given them a comparison to “Big Brother”
in the media\(^{23}\). Additionally, proctoring systems originally created for the online programs or remote entrance exams have been routinely collapsing under the workload or straight up hacked – such was the case in Russia\(^{24}\). American students, supported by psychologists, attest that proctored exams have only exacerbated their anxiety from studying\(^ {25}\).

With that, while proctored exams do provide the necessary protection from academic fraud, the price of this protection might be too high, given the current development of those systems and issues they have shown under heavy load, both conceptually and technically.


An alternative to using proctoring systems is an open-book exam. This is an exam type, which permits the usage of any external source of information. There is a positive experience in conducting such an exam in the online format: Faculty of Medicine at Imperial College of London\(^ {26}\). In this case, the fight against academic fraud is losing its relevance: questions exams are formulated in such a way that, despite legalized use of different sources, allow you to evaluate learning outcomes. Despite pronounced success, Imperial College of London did face a number of organizational problems: international students, returning to their countries, were forced to pass examinations in the Greenwich time zone. The university said that living in a different time zone is not a circumstance requiring changes in the rules for passing exams, as a result of which students were forced to take exams at night\(^ {27}\).

Like other forms of online exams, open-book exams are not immune to problems with internet connection and technology – you do have to submit the text of your work somehow – however, they are one of the more popular types of online examination. For example, adoption of such practices of the case by case basis

\(^{23}\) Mare. How are we going to test (and do we let Big Brother watch)? https://www.mareonline.nl/en/background/how-are-we-going-to-test-and-do-we-let-big-brother-watch/ (access 15.06.2020);
\(^{25}\) Pervoe Studenheskoye Agsnvto. 700 students of HSE couldn't pass online exams due to hacker attack, https://pervoe.online/news/student-v-vuze/8642-ddos_ataka_hse/ (15.06.2020).
\(^{27}\) The Guardian. Medical students take final exams online for first time, despite student concern, https://www.theguardian.com/education/2020/mar/22/coronavirus-forces-medical-students-sit-final-exams-online (15.06.2020).
\(^{Ibidem}\).
can be found in major Ivy League colleges\textsuperscript{28}, as well as leading UK universities – from Oxford\textsuperscript{29} to Bristol\textsuperscript{30} and Warwick\textsuperscript{31}.

An open-book exam can be combined with a basic form of proctoring, allowing to suppress some forms of academic fraud, nevertheless possible in such exams. National University of Singapore has discovered cheating during open-book exams in the form of execution of the assignment for the examinee by another person\textsuperscript{32}.

It is believed that correctly formulated tasks can lower the risks of cheating during open-book online exams, and basic proctoring (e.g. copy-paste check) or cross-reference anti-plagiarism system can further reduce them, while not creating a heavy privacy concern or a burden on the functioning of the computer of the examinee. These findings can be supported by the experiences already shared by some of the instructors. For example, Department of Chemistry of Ohio State University has adopted non-proctored online tests and open-book exams for their courses, and used the same tools as described above, while attesting to their success\textsuperscript{33}.

Technically, the adoption of this strategy is possible under the current regulations in Russia – in practice, it falls well within the rules on the “written exam” established by the current regulatory documents.

\textbf{4. Strategy Four – Rescheduling of the Exams}

Among other options for solving problems with the final state attestation - widely discussed, but not yet massively implemented – a rescheduling of the exams to a period of a more favorable sanitary and epidemiological situation (e.g. July or September). Such reschedules had been made, for example, for the school graduation exams.

\textsuperscript{29} Oxford University. Open-Book Exams, https://www.ox.ac.uk/students/academic/exams/open-book?wssl=1 (access 15.06.2020).
\textsuperscript{31} University of Warwick. Examinations, https://warwick.ac.uk/services/academicoffice/examinations/ (15.06.2020).
This practice can be necessary for those students whose training (and accordingly, preparation for the exam) requires access to a special software, lab equipment or other tools, unavailable at home or at a non-university computer.

In Russia, this option was discussed in relation to those areas of education where online exams are not possible (medical, sports, creative programs, as well as areas of study related to state security), as well as for those students who do not have technical capabilities for passing exams in an online format.

The problems of this decision are due to the lack of a regulatory framework for solving a wide range of issues related to the transfer: the introduction of “involuntary” academic vacation or extension of the program, actions of student status, student benefits, providing accommodation in a hostel, the possibility of “seamless” admission to graduate / postgraduate studies and maintaining deferment from the army. Due to the abundance of those issues, almost none of the universities in Russia agreed to this proposition, and it was not heavily supported by the Government as well.

5. Strategy Five – Change of Assessment System

An original strategy – change of the grading system - was adopted by most of the leading law schools in the USA. It was overwhelmingly decided to switch from standard grading system (grades or scores) for the “pass / fail” system34. Dean of the Columbia Law School Gillian Lester said in her letter to students and faculty that the main reason for this approach is equality among students35. Like most universities in the US, Colombia sent most students home. Students off-campus may have less access to technology and medical services or may encounter difficult circumstances that interfere with their academic performance. Additionally, due to heavy competition in the legal market, lower grades could damage their career perspectives, since they traditionally play an important role in obtaining placements securing job offers in top law firms or prestigious judicial clerkships in American courts.

The same decision after discussions in the student community and administration was accepted at Harvard Law School36. Initially, students were proposed to decide which of the two systems should be used with respect to them. This decision

aroused rejection among students who considered that those who choose the usual grading system will be perceived by employers as more hardworking or better able to cope with difficulties and as a result will receive advantage over the rest - those who preferred the “pass / fail” system. As a result, the administration transferred all students to “pass / fail” system.

Similar decisions on the transition of assessment system were made by many other leading universities in America, not just law schools: Columbia University in general, the University of Ohio and others. Some universities, such as Massachusetts Institute of Technology or University of California system, introduced an adapted version of this system: “pass / no record”, where the latter grade is not placed in the transcript.

Similar decisions had been taken at universities in Canada, Australia and England. The same examples are seen in Asia - in Singapore and Hong Kong, while China organizes all exams in the usual form.

While interested and certainly mindful of the experiences and mental condition of students, this practice was not permissible by law in Russia. The existing procedure for conducting final state attestation in higher education stipulates the requirements for grades as “excellent”, “good”, “satisfactory” and “unsatisfactory” – any other options are impossible.


The option of canceling exams was actively promoted internationally by the student community: in England students of various educational institutions proposed the cancellation as an alternative to transferring exams to fall. For graduate students, this means simplifying requirements for successful graduation from the university.

42 Para. 16 of Procedure for Conducting State Final Attestation for Educational Programs of Higher Education – Bachelor’s Programs, Specialist Programs and Master’s Programs (adopted by the Order of Ministry of Education and Science of Russian Federation No. 636 of 29 June 2015).
(the number of successfully completed credits). This position was expressed by the National Student Union of UK\textsuperscript{43}. In their statement, they emphasized that persons with disabilities, foreign and poorer students will be significantly disadvantaged if universities plan to conduct online exams and tests in this semester. They add that marginalized and less privileged students, including those with disabilities and those who have returned to remote regions are most likely to suffer the most due to a lack of necessary technical means for quality remote education.

According to the apologists of this approach, last year students should be able to choose a way to complete their studies. For example, it could be getting an estimated grade based on previous achievements, passing the online exam in the already mentioned open-book format or taking exams at the university later.

The ability to completely cancel exams in the current half year is available in those educational systems in which there is no institution of the final exam (or exams can be cancelled in non-graduating years), and obtaining a certificate of education depends on the completion of the graduation requirements – that is, the successful accumulation of predetermined number credit units and fulfillment of additional conditions (for example, passing certain basic courses or defending the thesis).

Despite the pleas of the students, minority of the Western universities caved in and cancelled the exams. This was not the case in Russia. As was explained previously, if the educational standard and rules of the university permit the cancellation of exams, the university administration was empowered to do it if they so wished, which was done by a significant amount of high-level universities. For example, Financial Academy under the Government of Russian Federation have cancelled state final exams on all of its study programs, but Law\textsuperscript{44}. Future graduates still had to defend their theses, while Law graduates had their defense cancelled instead. The majority of the faculties of the Ural Federal State university have also cancelled their state final exams\textsuperscript{45}. This proves the ability of Russian universities to take bold decisions in the face of the uncertain circumstances and adapt to the world practice, where the institution of final all-encompassing exams have long since been discontinued (if it did appear at the first place).

\textsuperscript{43} The Guardian. UK students’ union calls on universities to cancel summer exams, https://www.theguardian.com/education/2020/mar/31/uk-students-union-calls-on-universities-to-cancel-summer-exams (15.06.2020).
\textsuperscript{44} TASS. Financial University Cancelled State Exams Due to Coronavirus, https://tass.ru/obschestvo/8244377 (15.06.2020).
Conclusions

Each of the described strategies has strengths and weaknesses. Problems with Internet communications and technology are common to all online exams. Online oral exams (without proctoring and open-book approach) can lead either to academic fraud or put the student at a disadvantage (if the answer is expected without time for preparation). It is significant that leading foreign universities have not been placing their faith in oral exams, as well as long discontinued the practice of “final's final”. Online proctoring systems, while fulfilling their task, are too unreliable and overbearing – the proper balance and technical prowess still needs to be found in order to make this option really equal to offline exams. Open-book exams and alike seem to be promising developments with regards to the student experience, but they require a high workload from teachers and universities in preparation and marking, which can also be attributed to the normal written exam. In author's view, this type of exam remains the best in terms of valid assessment, with a possibility to create sufficient checks without disturbing students’ privacy.

The almost-ubiquitous transformation of exams to online format creates too many difficulties for many students with employment and enjoyed weak regulatory basis, even after subsequent amendments made, for example, in Russian universities. Thus, there is no perfect approach – each of them is different, and it is interesting to see how the nature of final state attestation in Russia will change after the analysis of the current years’ experience.

BIBLIOGRAPHY


Mare. How are we going to test (and do we let Big Brother watch)? https://www.mareonline.nl/en/ background/how-are-we-going-to-test-and-do-we-let-big-brother-watch/.

Nesavisimaya Gazeta, Students have rallied against proctoring, citing privacy concerns, https://www.ng.ru/content/articles/681938/.


Orgeon State University Exam Proctoring, https://ecampus.oregonstate.edu/services/proctoring.


Pervoe Studenheskoye Agesntvo. 700 students of HSE couldn't pass online exams due to hacker attack, https://pervoe.online/news/student-v-vuze/8642-ddos_ataka_hse/.


ProctorU Services, https://www.proctoru.com/services/


TASS. Financial University Cancelled State Exams Due to Coronavirus, https://tass.ru/ obschestvo/8244377.


University of Houston Proctoring Services, https://uh.edu/online/students/proctoring-students.php.


University of Warwick. Examinations, https://warwick.ac.uk/services/academicoffice/examinations/.