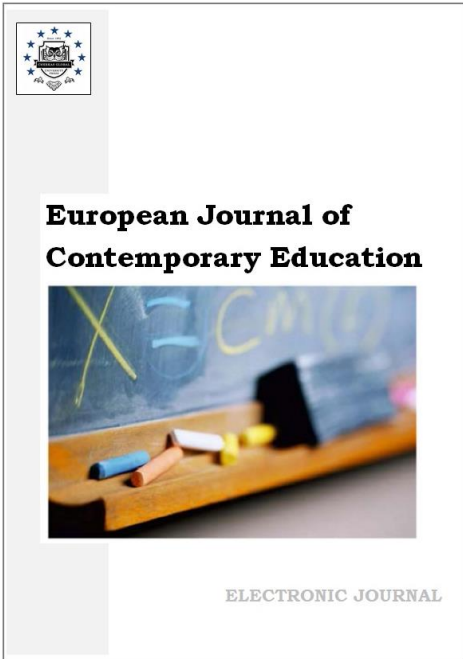




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Quality of Educational Services in the Distance Format: Assessment of Moscow Higher Education Institutions' Students

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Abstract

The sphere of education was one of the first to experience the effects of the COVID-19 pandemic and responded to the introduced restrictions by transferring all educational activities to the distance learning format. The gist of the problem is to preserve the quality of educational services in the transition to the distance learning format.

The purpose of the study is to analyze students' assessment of the quality of educational services provided in the distance format by Moscow higher education institutions.

The authors report the results of a survey of students from two universities, the Moscow State University of Food Production and the Russian State Social University. The survey sample includes 423 MSUFP students and 350 RSSU students studying in the full-time, part-time, and extramural forms of study. The time frame for the study is March-May 2022.

The results obtained show that, according to students, the transition of the higher education system to distance learning during the COVID-19 pandemic was performed quite promptly and efficiently. However, the problem of the implementation of distance learning in teaching university students requires further work on both methods and technological instruments.

The research results demonstrate that preservation of the quality of educational services in the transition to distance learning depends on the level of students' learning motivation, their readiness for independent studies, reliable means of communication (computers, laptops, tablets), high-speed communication channels and digital infrastructure of higher education institutions, and much more.

The research findings suggest that the main problems faced by students as a result of the transition to distance learning can be classified into two groups. The first group is technical

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difficulties (Internet speed and quality of connection) and the lack of necessary gadgets (computer/tablet, and a headset for them), i.e. inability to communicate with the teacher. The second group includes problems of a personal nature: willpower, self-organization, motivation, and self-discipline.

Keywords: distance learning, quality of educational services, digital infrastructure, educational services, distance learning technologies.

1. Introduction

The sphere of education was one of the first to experience the effects of the COVID-19 pandemic and responded to the introduced restrictions by transferring all educational activities to the distance learning format.

Traditional education is changing. Digital instruments have become seriously and permanently embedded into it. The main issue now is to develop methods for working with these tools.

The rushed transition to full distance learning was made possible by the experience in the creation and use of distance learning technologies accumulated by Russian universities since the mid-1990s (Shtyhno et al., 2020).

In 1995, government officials approved the Concept of Creation and Development of a Unified System of Distance Education in Russia. Distance education (DE) is understood here as “a complex of educational services provided to the general public in the country and abroad by means of a specialized information and educational environment, at any distance from educational institutions”.

The restrictions brought about by the COVID-19 pandemic essentially launched a new reform of the higher education system in Russia. Notably, these changes have affected both learning technologies and the content of educational programs.

To get an idea of the readiness of universities' digital infrastructure for the transition to distance learning, here are the facts and figures of the initial situation as of the middle of March 2020, taken from the study conducted by the National Research University Higher School of Economics (NRU HSE) “Digital Infrastructure of Russian Universities”:

- 13 % of universities did not have even minimal infrastructure (no high-speed Internet access, no specialized data storage systems to host information systems);
- 11 % had digital infrastructure sufficient to fully organize online learning and host content on their own facilities;
- 44 % had licenses for software tools for synchronous group work (like ZOOM);
- 88.51 % of dormitories were provided with Internet access;
- 88 % of universities stated that they had digital learning management systems (LMS). This system was developed back in 2006 and by 2020 had undergone six upgrades but only 45 % of universities' indicators correspond to the real use of LMS for the organization of educational activities.

Thus, by the start of remote work, most universities did not have the infrastructure to support the deployment of full-fledged distance learning, and one in ten universities did not have even basic infrastructure to provide distance interaction.

The Russian State Social University (RSSU) is convinced that both face-to-face and remote access learning have their advantages and drawbacks. Moreover, digitalization at this university started quite a while ago. The factors considered as the benefits of distance learning include:

Accessibility – the opportunity to study without any attachment to the location of the educational institution and the student;

Flexibility – the opportunity to study on a flexible schedule and combine education with work;

Cost-effectiveness – the lack of time and financial expenses for transportation to visit the educational organization;

Cost – DE typically costs less than full-time, part-time, or extramural learning without the use of distance learning technologies.

The disadvantages of distance learning are the following: limited personal communication with teachers and other learners in the learning and out-of-classroom environment; dependence on technical and software to ensure the system of distance learning.

It should be pointed out that the first enrollment in educational programs of distance learning with the use of distance technology at the RSSU was in 2014. In 2019, this form of education was one of the most popular.

It is also important that currently, classes at the RSSU are conducted in an integrated format. Lectures are held in classrooms and broadcast on the Internet strictly according to the schedule, and the recordings are published in the electronic educational environment, which allows students to revisit the studied material at any time.

The Moscow State University of Food Production (MSUFP) founded in the 1930s is one of the oldest universities in Moscow. In 2009, the university launched its distance learning project in two specialties:

- Accounting, analysis, and audit (080109);
- Economics and management in the food industry (080502).

In line with the Recommendations for implementing the educational process to prevent the spread of the novel coronavirus infection (COVID-19), the MSUFP realized the educational process of students in every form of education in the following way:

- lectures were held in the distance format according to the schedule of classes.
- laboratory, seminar, and practical classes were held in person according to the schedule of classes in compliance with the sanitary requirements.

To use the e-learning environment, the MSUFP developed instructions for students and teachers on how to post educational materials, create test assignments, publish announcements, collect students' written works, and assign grades.

One of the biggest concerns of universities during the pandemic was a drop in the quality of education. Due to the varying readiness of staff and departments to transition to the online environment, insufficient technical equipment, and other difficulties, many students receive a completely different experience in the online environment. In this light, universities need to identify their weaknesses and develop appropriate methods for monitoring in the new environment.

Prior to the pandemic, many universities already had the experience of remote work with their students. However, the distance format is not that popular for the practices of extracurricular work with students, and many teachers face a new task – the need to involve the student community in the life of the university through online practices. This mission is especially valuable in a time of students' isolation – it is necessary to preserve the quality of the educational experience and the stable psychological climate and dynamic in the university, as well as to collect student feedback (Klyagin, 2020).

The following is an analysis of research publications that consider the aspects of the problem of higher education transitioning to the distance learning format and on which we rely in our research.

In a report by representatives of the rector community at a meeting of the Public Council under the Ministry of Science and Higher Education entitled “Lessons of the Stress Test: Russian Universities under Pandemic Conditions”, it was noted, in particular, that “the experience of Russian universities has demonstrated the importance of digital technologies and the existence of issues that cannot be resolved in their absence. In this regard, it is necessary to accelerate the development of digital resources and relevant practices of the educational process, to improve the methodological qualifications of teachers, and to improve the digital infrastructure of universities”.

The gist of the problem is to preserve the quality of educational services in the transition to a distance learning format.

The study goal is to establish students' opinions on the quality of educational services provided in the distance format by Moscow universities.

Research objectives

1. To study the role and significance of the transition to distance learning in higher education during the COVID-19 pandemic;
2. To build and analyze tables and charts based on the materials of the surveys conducted by RAEX Analytics, LLC and the All-Russian Public Opinion Research Center (VTsIOM), as well as student surveys at the MSUFP and RSSU;
3. To establish the advantages and disadvantages of distance learning as seen by students;
4. To identify the impact of distance learning on the quality of educational services;

5. To analyze the problems faced by students as a result of the transition to distance learning;

6. To identify the prospects for the development of distance learning.

The relevance of the topic under study owes to the transition to distance learning in view of the prevention of the spread of COVID-19.

Beginning March 14, 2020, the Order of the Ministry of Science and Higher Education of the Russian Federation, in order to prevent the spread of the novel coronavirus infection in the Russian Federation ([Prikaz Ministerstva..., 2020](#)) stipulated the need to ensure mediated (remote) interaction of students and faculty, including with the use of distance learning technologies, which continues to this day.

In less than two semesters, the Russian system of higher education underwent modernization. In such a short period of time, the sphere of higher education was radically transformed.

Thus, students face the need to learn how to master general cultural and professional competences through distance learning. Practice shows, however, that in most graduates, the general cultural competencies are developed insufficiently, and modern ICT and e-learning are only episodically used to improve students' competences.

2. Methods

The study is based on analytical, statistical, and forecasting materials of the Ministry of Science and Higher Education of the Russian Federation, publications on this topic, and our own observations and conclusions obtained during the study.

The research instruments include the methods of analysis, generalization of statistical data, and the comparative method, as well as the methods of synthesis, induction, and analogy.

In disclosing the problem under study, we relied on:

- The results of the survey of university students by RAEX Analytics, LLC – “Distance Education”, 2020. The RAEX (RAEX Analytics) rating agency conducted a survey of more than 6,000 Russian students from 153 Russian universities and prepared the first national study on DE based on the data obtained, which was published on July 5, 2020.

- Data from a survey of university students conducted by VTsIOM “On satisfaction with the organization of distance education, on changes in the level of study load, and on the possible effects on the quality of education due to the transition to a distance learning format” published May 27, 2020.

An initiative all-Russian survey, which involved 800 students of Russian universities. The survey was conducted by telephone interview using stratified two-branch random sampling of landline and mobile numbers. The survey was conducted May 14-16, 2020. The margin of error was 3.5 %.

- In May 2022, we conducted a sociological study in the form of a survey of full-time, part-time, and extramural students at the MSUFP. The purpose of the study was to obtain students' assessment of the quality of educational services in the distance format.

Students' assessment of the organization of distance learning is directly connected to the quality of their own education, which is why the opinion of students as active participants in the learning process is highly valuable to universities. The survey followed strict methodological procedures and, above all, the anonymity of respondents.

In total, the survey was taken by 423 respondents.

The gender composition of the sample was:

- female – 58.6 %;

- male – 41.4 %.

The age distribution of the students: 18-20 years old – 29.3 %; 21-25 years old – 47.6 %; 26-30 years old – 11.3 %; 31-35 years old – 5.2 %; 36-40 years old – 4.5 %; 41-50 years old – 2.1 %.

Form of study:

- full-time – 64.2 %;

- extramural – 35.8 %.

The indicated age and gender composition implies that the majority of the respondents studied full-time.

- In March 2022, we also conducted a survey of full-time, part-time, and extramural students at the RSSU. A total of 350 students took part in the survey.

The gender composition of the RSSU sample was:

- female – 53.2%;
- male – 46.8%.

The age of the students was: 18-20 years old – 37.3 %; 21-25 years old – 39.7 %; 26-30 years old – 9.3 %; 31-35 years old – 6.1 %; 36-40 years old – 5.3 %; 41-50 years old – 2.3 %.

Form of study:

- full-time – 74.6 %;
- extramural – 25.4 %.

Participants in the survey were mostly those studying full-time. The questionnaire for students to assess the quality of educational services provided in the distance form at the RSSU contained 25 questions about distance learning. The student survey was conducted to determine how the transition to distance learning has affected the quality of education.

The results of the study were analyzed by analyzing the relationship between the capabilities of students (MGUPP, RSSU, Moscow Universities) to use various components of electronic educational systems of training and the level of their provision.

The authors used the calculation method for the Pearson criterion χ^2 (Tables 1-3).

Table 1. Analysis of conjugacy tables using the chi-square criterion of the MGUPP

Factorial feature	Effective feature		The amount
	ongoing	not being conducted	
Individual work with teachers using video chat	30	70	100
Viewing recordings of video lectures	68	32	100
Monitoring progress in your personal account	57	43	100
Viewing live lectures in online format (with the ability to ask questions)	90	10	100
Attending video seminars (group classes) online	86	14	100
Performing interactive tasks (tests, surveys, etc.).	79	21	100
Receiving tasks in your personal account	77	23	100
Correspondence with teachers, exchange of documents	89	11	100
Total	576	224	800

The number of degrees of freedom is 7. The value of the criterion χ^2 is 143.254. The critical value of χ^2 at the significance level $p = 0.01$ is 18.475. The relationship between the factorial and effective signs is statistically significant at the significance level $p < 0.01$.

Table 2. Analysis of conjugacy tables using the chi-square criterion of the RSSU

Factorial feature	Effective feature		The amount
	ongoing	not being conducted	
Individual work with teachers using video chat	32	68	100
Viewing recordings of video lectures	68	32	100
Monitoring progress in your personal account	53	47	100

Viewing live lectures in online format (with the ability to ask questions)	88	12	100
Attending video seminars (group classes) online	88	12	100
Performing interactive tasks (tests, surveys, etc.).	79	21	100
Receiving tasks in your personal account	78	22	100
Correspondence with teachers, exchange of documents	92	8	100
Total	578	222	800

The number of degrees of freedom is 7. The value of the criterion χ^2 is 148.309. The critical value of χ^2 at the significance level $p = 0.01$ is 18.475. The relationship between the factorial and effective signs is statistically significant at the significance level $p < 0.01$.

Table 3. Analysis of conjugacy tables using the chi-square criterion of Moscow universities

Factorial feature	Effective feature		The amount
	ongoing	not being conducted	
Individual work with teachers using video chat	32	68	100
Viewing recordings of video lectures	68	32	100
Monitoring progress in your personal account	57	43	100
Viewing live lectures in online format (with the ability to ask questions)	81	19	100
Attending video seminars (group classes) online	82	18	100
Performing interactive tasks (tests, surveys, etc.).	64	36	100
Receiving tasks in your personal account	64	36	100
Correspondence with teachers, exchange of documents	89	11	100
Total	537	263	800

The number of degrees of freedom is 7. The value of the criterion χ^2 is 101.910. The critical value of χ^2 at the significance level $p = 0.01$ is 18.475. The relationship between the factorial and effective signs is statistically significant at the significance level $p < 0.01$.

3. Results

Below we provide data from a comparative analysis of surveys conducted by the rating agency RAEX, which covered more than 6,000 students at 153 Russian universities, and VTsIOM, which surveyed 800 students at Russian universities.

The weakest point in the transition to the distance learning format, according to experts, is the technical equipment of universities (computers, educational programs, application functionality, Internet, etc.). In surveys, over 70 % of students indicated satisfaction with equipment (from 72 % in the VTsIOM surveys to 75.4 % in the RAEX Analytics, LLC surveys), taking "Completely satisfied" and "Mostly satisfied" together. Only 5 to 6.7 % of students were completely dissatisfied with the technical equipment of their university.

The use of information technology provides maximum ease of continuous monitoring of the quality of the educational process by managers and employees of educational units during the school day and provides the opportunity for daily monitoring of each pair of classes held in accordance with the current schedule.

For example, in face-to-face classes, it takes time to visit each other's classes to share experiences, exercise supervision, and so on. In distance learning, on the other hand, it only requires joining the given academic group (for example, a team in the terminology of Microsoft Teams) to see all the students in attendance at the study session, conduct a verbal survey in the videoconference mode, assess the methodological actions of the teacher, assign different tasks, including projects, to each student, or perform current knowledge assessment or midterm attestation, etc., including with the use of test constructors (Safontseva, 2021).

Despite the common belief that distance learning is rapidly gaining momentum and is gradually replacing the traditional format, or at least competing with it, most respondents report that prior to March 2020, they did not have personal experience studying in the distance mode (68 %). Thus, in fact, only around one in three students had the experience of distance learning. Therefore, it can be argued that the significance and popularity of this new format of learning prior to the pandemic were somewhat overestimated.

Table 4. Distance learning opportunities available to students at the RSSU, MSUFP, and in Moscow in general (%)

	RSSU	MSUFP	Moscow Universities
Individual work with teachers via video chats	32	30	32
Viewing video recordings of the lectures	68	68	68
Control of academic performance in the personal account	53	57	57
Watching live lectures online (with the opportunity to ask questions)	88	90	81
Attending video seminars (group lessons) online	88	86	82
Completing interactive assignments (tests, surveys, etc.)	79	79	64
Receiving assignments in the personal account	78	77	64
Correspondence with teachers, exchange of documents	92	89	89

Source: compiled by the authors based on data from RAEX Analytics, LLC, RSSU, and MSUFP.

The results indicate that 89 % of students at Moscow universities report having access to correspondence with teachers. In turn, accessibility is noted by 89 % of students at the MSUFP by 92 % at the RSSU, which is 3 % higher than the Moscow average. Receiving assignments at their personal accounts are 78 % of RSSU students and 77 % of MSUFP students, while the average percentage across Moscow universities is much lower at 64 %.

The experience of completing interactive assignments (tests, surveys, etc.) is reported by 64 % of Moscow university students overall, while at the MSUFP and the RSSU, this value reaches 79 %, which is 15 % higher than the city average.

The situation with visual contact, on average across the Russian Federation, is not quite good – only 69 % of respondents can attend video seminars. However, the RSSU and the MSUFP provide much better accessibility to video seminars with 88 % and 86 %, respectively.

The availability of live online lectures (with the opportunity to ask questions) is noted by 90 % of MSUFP students and 88 % of RSSU students, the average across Moscow being 81 %.

Access to the recordings of video lectures: on average across Moscow, the recordings of lectures are available to two-thirds of students (68 %), at the RSSU – to 68 %, and at the MSUFP – to 68 %. Thus, almost half of students at Moscow universities have transitioned to the distance learning format. However, control over academic performance through the personal account is available to a little more than a half of students regardless of their place of study: at the RSSU – to 53 %; at the MSUFP – to 57 %, and in Moscow – to 57 %.

Finally, individual work with teachers via video chats is practiced by one in three Moscow university students (32 %), by 32 % at the RSSU, and by 30 % at the MSUFP.

In distance learning, the student works without any direct physical contact with teachers or groupmates, which is why they need to be more engaged and motivated to learn (Ivanova, Zhukova, 2016).

It is also worth noting that online learning requires the student to have not only a high level of motivation, but also the ability to self-study, and mastery of the skills necessary for this. Meanwhile, not every student is able to study on their own, especially if it requires mastering quite complex training courses. According to some data, only 5-10 % of students in the fully online format of education complete their studies successfully (Kolesnikova, 2019).

4. Discussion

Valery Falkov, Minister of Science and Higher Education of the Russian Federation, admitted that the quality of distance learning in the country as a whole is worse than that of full-time education. "Yes, the quality of distance learning differs from the quality of full-time education, because it's one thing when we communicate with you in person, and another thing when we communicate on TV. But it's a forced necessity, education didn't become extramural because of the transition to distance learning.

The main difference between full-time and extramural education is not in the lessons on the computer, but in the number of hours the teacher works with the student."

Analysis of university practices indicates that there have been several modes of organizing educational activities during the period of remote work:

- asynchronous or extramural (students study the material at their convenience, according to the deadlines set by the teacher);
- synchronous (simultaneous participation in a class, for example, in a webinar format);
- mixed (a combination of synchronous and asynchronous interaction, depending on the pedagogical objectives).

Independent evaluation of the quality of education is an assessment procedure based on information about the educational activities of organizations engaged in educational activities. Independent evaluation of the quality of education is represented by external and internal evaluation.

External evaluation is conducted by public experts (public accreditation, including professional-public and international accreditation).

Internal evaluation is conducted by the university itself, and each educational organization has its own internal system of education quality.

Objectives of the internal independent evaluation:

- improving the structure and updating the content of educational programs implemented in the educational organization;
- improvement of resource provision of the educational process;
- improving the competence and qualifications of teaching staff involved in the implementation of educational programs;
- increasing the motivation of students to successfully master educational programs;
- strengthening the interaction between the educational organization and social partners-employers on improving the training of students;
- combating corruption in the educational process (Rybina et al., 2020).

Here we should note the advantages and disadvantages of distance learning in universities at the present moment.

The advantages of distance learning in universities:

- Reduced costs of education. The most budget-friendly type of education in Russia is distance learning because the work time of teachers is reduced to a minimum, there is no need for printed teaching materials and manuals, and the cost of maintaining the educational institution and teachers is reduced.

- Reduced training time, which makes it possible not to miss classes. Mobile learning gives a new quality to learning, most fully reflects the trends in the education of a modern person, providing constant access to information at any time; it is a new toolkit in the formation of a person of the information society, where a new learning environment, independent of place and time, forms (Kuklev, 2009).

- Flexible work schedule. The student manages their own time and workload and creates their own work schedule.
- Students have no ties to their place of residence; all they need is a computer and a high-speed, stable Internet connection.
- The student can combine studies with their main occupation.
- Opportunity to study with a preferred number of people.
- A peaceful environment. Lack of subjectivity in knowledge assessment, decreased stress level while passing exams and tests.
- High degree of actualization of the materials. Active use of digital technologies, the Internet, and software allows for adjustments and timely updates of educational programs in the fastest possible way, following changes in the external environment (Dedyuhin et al., 2020).
- High results. This type of learning in some cases outperforms the traditional form of learning, having an individual approach at its core. When working independently, the student understands the material more deeply, successfully applies theoretical knowledge in practice, shows more interest because of the use of modern technologies, and has an opportunity to get an answer to each of their questions.
- Thus, the use of gadgets allows you to easily and quickly find the necessary information, save time, develop and progress, fix a certain moment, and organize fast and convenient communication (Kabanova, Vetrova, 2019).

Like any form of education, distance learning has a number of disadvantages at any level of education, some of which may also overlap.

Disadvantages of distance learning in higher education:

- Successful training requires self-control, strong willpower, and a sense of responsibility.
- Communication skills are not developed, since interaction with other people (teachers and groupmates) is brought to a minimum.
- Lack of live practice, which makes it more challenging to master the specialty. Modern digital technological tools do not fully compensate for the deficit of social interaction in the classroom (Frolova et al., 2020).
- Problems of authentication, it is almost impossible to verify whether the student performed the assignment on their own (Rybina et al., 2020).

Digital technologies, including those using remote access, allow employing a more individualized approach and adjusting the learning trajectory to the individual characteristics of the student.

Face-to-face learning provides the development of social interaction skills and gives an opportunity to better know the teacher's personality, to ensure an upbringing effect.

The task of a university is to develop a comprehensive educational system that incorporates both of these forms of learning with their respective benefits.

The experience of the past three months has formed a window of opportunity for the next step in the development of higher education. It has revealed the problems and tasks that cannot be addressed without digital technology and the distance format. Most faculty members and students tried the new features and were able to work in this mode. However, the limitations of this method are also clear. The accumulated fatigue poses the risk of a rollback of the system to the pre-digital format. In this context, it becomes vital to learn from the acquired difficult experience, to form a model of universities' operations minding the discovered opportunities and limitations, and to test this model and promote new practices in the higher education system, which could become more resistant to the new external challenges and more productive for the development of the Russian economy and society.

5. Conclusion

The results of the conducted study demonstrate that in the eyes of students, the transition to distance learning in the system of higher education during the COVID-19 pandemic was performed with enough promptness and efficiency. However, the problem of introducing distance learning in teaching university students requires additional elaboration of both methods and technical tools. Thus, 70 % of university students noted that individual work with teachers using video chat is not conducted.

At the same time, the overwhelming majority of respondents (88 %) noted the possibility of watching "live" lectures in online format, attending video seminars online. Almost every student (90 %) gave a positive assessment of such opportunities as correspondence with teachers, exchange of documents. Students of Moscow universities noted that one of the positive practices of using distance learning is performing interactive tasks, as well as receiving tasks in their personal account. Ambiguous assessments were given by respondents according to such criteria as monitoring progress in their personal account. Slightly less than half of the students surveyed noted that academic performance is not monitored, and at the same time, half of the respondents replied that teachers are monitored (47 % and 53 %, respectively).

The analysis of the assessment of educational process organization during the forced transition to distance learning suggests that online lectures (with the opportunity to ask questions) and seminars were organized primarily through distance learning technologies.

In the opinion of students, the advantages and disadvantages of distance learning include the following.

The advantages of distance learning:

- Reduced costs of education;
- Reduced time costs of education;
- Flexible learning schedule;
- No attachment to the place of residence, it is enough to have a computer and high-speed

Internet;

- The student can combine study with their main occupation;
- Opportunity to study with a preferred number of people;
- Reduced stress levels when taking exams and credit works.

The drawbacks of distance learning:

- Not all students have enough self-control, willpower, and sense of responsibility.
- Minimal communication with teachers and other students, hence communication skills are not developed;

- Lack of live practice, difficulty in mastering the specialty.

In his interview with RIA News on December 28, 2020, the Russian Minister of Science and Higher Education Valery Falkov acknowledged that, in general, the quality of distance learning in the country was lower than that of face-to-face learning.

The main emphasis was placed on students' independent work and reporting on this work to the teacher.

The main problems encountered by students as a result of the transition to distance learning can be grouped into two groups. The first group includes problems of a technical nature (the speed of the Internet and the quality of connection) and the lack of necessary gadgets (computer/tablet, and a headset for them). The problem facing the students was the lack of technical equipment and the ability to communicate with the teacher. The second group includes problems of a personal nature: willpower, self-organization, motivation, and self-discipline.

This research is advised to be considered when designing and implementing distance learning.

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