Technology for assessing students' satisfaction with studying at a higher state education institution

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Abstract. The technology for evaluating student satisfaction includes conducting a social survey of students based on eight main criteria. Based on the results of a social survey, an assessment of overall satisfaction with studying at a state University is given. The introduction provides an overview of changes in regulatory and legal documents. The main goal of the research is to analyze the social survey of students. The article describes a sociological survey of University students, the criterion of "satisfaction with learning conditions". The evaluation criteria included eight main factors. 890 students were interviewed. Satisfaction and dissatisfaction were identified. The study describes students’ suggestions for improving the educational process in conditions of self-isolation, during the COVID-19 period. Each indicator was evaluated. Identified activities that satisfy/unsatisfactory student learning. The strengths of the Russian state social University are revealed. The scientific novelty of the proposed research is a social survey of students' satisfaction with the learning conditions during the period of forced self-isolation. In conclusion, the results of the social survey are summarized. The best quotes of students are given. There are useful links to the University's information sources. International student exchange programs are listed. Countries for the exchange of education have been identified. In conclusion, the statistics of the analysis of satisfaction with training are given. The University trains students with disabilities. The University has excellent material and technical equipment and a virtual educational environment. The final review of training at the Russian state social University is positive. A natural science study was conducted to identify cause-and-effect relationships.

1. Introduction

Requirements for the working conditions of the teaching staff. Mikhail Mishustin, Prime Minister of the Russian Federation, signed Order No. 1589-R on support for medical, scientific and educational institutions, dated June 17, 2020, in the conditions of work COVID-19, working conditions, support for employers and employees. Financial resources to support organizations are allocated from the government's reserve Fund. Government support allows you to compensate or reduce the costs of institutions. Government support allows you to pay salaries to employees, cover the cost of utilities, as well as cover the costs associated with compliance with sanitary and epidemiological requirements. On July 23, 2020, Deputy Prime Minister of the Russian Federation Tatyana Golikova held a meeting of the Russian trilateral Commission on regulating social and labor relations, in terms of regulating remote and remote work, and systematizing requirements for assessing working conditions. Changes to the...
Labor code are being discussed. The draft Federal law "on amendments to the Labor code of the Russian Federation" will solve a set of tasks, namely:

- increasing employment flexibility (combined employment);
- organization of non-stationary jobs;
- application of information and communication technologies in labor relations;
- use of electronic document management.

News of the Russian Government [1]. The labor code from January 1, 2020 transferred all organizations to electronic workbooks (Federal law No. 439-FZ of 16.12.2019). The deadline for the final transfer of employees and registration of e-books should end on December 31, 2020. A new production calendar for 2020 has come into force. By Presidential decree No. 354 of 01.06.2020, additional non-working days are defined, with the preservation of wages. The main goal is to reduce the spread of COVID-19 coronavirus infection. The draft law no. 736455-7 (passes the first reading, under approval) allows the exchange of electronic statements between an employee and an employer, and other documents necessary for the conclusion of an employment contract. The Labour code is being amended: article 15.1; article 15.2; article 15.3. Draft law No. 88941 (first reading, pending approval) on vacation pay provides for the amendment of part 9, article 136 of the Labor Code. Additionally, the requirements for payment of unscheduled leave will change. Resolution of the Pension Fund Board dated 13.06.2019 No. 335 each citizen is issued an electronic notification (replacement of SNILS - the Insurance Number Of the individual Personal Account of the citizen).

Natural science education focuses on the study of cause and effect relationships. Changes in quantitative and qualitative characteristics lead to changes in structural and functional dependencies. Natural science education has the following tools: mathematics, statistics (data from a sociological survey), logic, abstract knowledge, sociology, Economics, and system analysis. Using the example of changes in the regulatory and legal framework of the Ministry of education, new requirements for training students are identified. With any changes, students are satisfied or dissatisfied with the new learning conditions. To identify the attitude of students to the new conditions in education, a sociological survey was conducted. Based on the results of the analysis of the sociological survey, taking into account the methods of system analysis, the satisfaction criteria were identified and described. Functional relationships and dependencies are identified. The reason for all changes is the self-isolation of students during the COVID-19 period. The investigative links are the Government's response and the development of new legislative documents in education. Applying a natural-scientific approach to the assessment of General changes in the study, the General satisfaction of students with changes in education related to the improvement of the virtual educational environment and the use of modern information and communication technologies was revealed.

Benefits for parents have changed. New support measures have been introduced for families with children and those who have lost their jobs. Families can receive monthly payments in the amount of 5 (five) thousand rubles for each child aged 3 years and older, starting from June 2020-payments for children from 3 to 7 years and from 3 to 16 years. Unemployment benefits correspond to the minimum wage (minimum wage)-12,130 rubles. New notifications on foreigners have been approved (conclusion/termination of an employment or civil contract with a foreigner) fulfillment of obligations to pay salaries to a highly qualified foreigner, special rules for the admission/dismissal of a foreigner who has received an education in Russia, provision of unpaid leave for more than one month for a foreigner who is studying in the Russian Federation. All the proposed changes in Labor legislation are aimed at electronic interaction between the employee and the employer. Electronic document management systems are an integral part of communication. Electronic document management systems are supplemented with new automated functions, with the robotization of typical operations, the use of artificial intelligence algorithms, and multidimensional data visualization. The class of electronic document management systems is moving from ECM systems to the CSP (Content Service Platform) concept.
The new direction of CSP allows you to apply artificial intelligence and machine learning technologies. These technologies allow you to solve problems that are associated with automatic data extraction, classification, and search. Automation of processes based on artificial intelligence algorithms is a new trend for the functionality of electronic document management systems. Previously, automation of document development, approval, and signing systems was limited to creating document templates and setting up routes for their approval and signing. Additional advantages of electronic document management systems are mobile applications for processing documents in the process. Mobile applications of gadgets are convenient for a person and allow you to work with documents when a person is traveling (in transport, at the airport, on a plane, etc.). the Use of mobile applications allows an employee to be promptly connected 24/7 (around the clock). In the study of Eliseeva DYu: Artificial intelligence algorithms can extract information from unstructured data. Artificial intelligence algorithms are able to classify data and enter it into the system. Analyze documents based on their historical past [2].

2. **Theoretical framework**

Government measures are aimed at modernizing the education system. The attitude of students towards the education system is changing. The main goal of the study is to identify satisfaction/dissatisfaction with education during the period of temporary self-isolation, in the conditions of COVID-19. The digital platform is a Virtual educational environment [3]. The digital platform aims to visualize educational content, lectures, and practices. Students send completed tasks to the teacher for verification. The automated system sends tasks to teachers for review. After grading, the automated system calculates the student's rating individually. В исследовании применяется естественнонаучный метод. Естественнонаучное исследование выявляет причинно-следственные связи. Natural science research reveals causal relationships. The tools used are a systematic analysis of a sociological survey. Logical analysis of new relationships. Mathematical calculation of the results obtained. New qualitative assessment of students’ educational satisfaction. Description of criteria for evaluating satisfaction or dissatisfaction.

3. **Results and discussion**

Higher education institutions (universities) are interested in high quality education for their students. The teaching staff of the Russian state University conducts training using distance technologies. In July 2020, a social survey of RSSU students was conducted to assess students’ satisfaction with their learning conditions. The purpose of the monitoring is to assess the level of students’ satisfaction with the conditions of study at the University. The method of sociological research was chosen as a quantitative method of collecting information – a questionnaire, which was attended by 890 students from all 13 faculties. The surveyed faculties are: Humanities, linguistics, Economics, faculty of information technology, faculty of communication management, faculty of social work, faculty of management, faculty of physical culture, faculty of ecology and techno-sphere security, faculty of medicine, faculty of arts, faculty of psychology and faculty of sociology.

3.1. **Satisfaction with the socio-psychological climate**

The level of satisfaction with the learning conditions of RSSU students is largely determined by the state of the socio-psychological climate in the team. Benevolent relations between students, teachers and students, and other employees of the University create a positive motivation to receive quality education, the formation of appropriate civil and personal positions of students. The results of the analysis of answers to questions about the socio-psychological climate at the University indicate that most students feel comfortable. They consider: relations between people tense-9% of respondents, socio-psychological relations between people neutral-24% of respondents, relations between people benevolent-67% of respondents (figure 1). The main importance of the socio-psychological climate in the team is the professionalism of management. If the management structure is centralized, the performance discipline of students and teachers is at a high level. Every student understands the importance of maintaining a positive social and psychological climate. Each teacher creates a positive social and psychological
climate for the benefit of the whole society and the team. Education takes place under favorable conditions.

![Bar Chart: Students satisfaction regarding social psychological learning conditions]

**Figure 1.** Assessment «Satisfaction with the socio-psychological climate».

### 3.2. Satisfaction with student life is one of the most important indicators of overall student satisfaction

The parameters of the quality of educational services are participation in public, sports, and creative events. Students were asked to evaluate various aspects of their student life. A positive aspect is the fact that 55% of respondents are highly satisfied with the conditions for conducting educational and entertainment events of the RSSU. Conditions are partially present – 42% of respondents. 3% of respondents believe that events should be presented more widely. The indicator "Satisfaction with student life" is marked positively. Activities provided - swimming pool, volunteer movement, theater studios, sports events, study abroad from the second year of study, additional government and presidential scholarships (figure 2).

![Bar Chart: Satisfaction with the conditions for various events]

**Figure 2.** Assessment of "student life Satisfaction".
3.3. *An important factor of satisfaction is "Educational, methodological and material-technical conditions for training"*

The highest rating was given by students for the position "providing opportunities for students to participate in scientific student conferences, round tables, and symposiums" - 78% of respondents. The scientific activity of the University is rated by students as "good" and "excellent". In second place - "participation of students in the implementation of research projects, grants" is 58%. The work of the University's student scientific society is recognized as effective – 64% of respondents. The University provides potential in the scientific field. Library and information services are provided free of charge (figure 3).

![Figure 3. Satisfaction assessment "Educational-methodical and material-technical conditions for training".](image)

3.4. *An important factor of learning satisfaction is the "Volunteer movement"*

The development of the volunteer movement is an important part of the educational system of the University. The movement is aimed at ensuring interaction with the social environment. Training and volunteering form the professional qualities of a person. Students develop the competence of social activity in the course of training. The student is able to provide support in society, self-determination, realization. The student is capable of creativity. Has the skills of independence, self-sufficiency, increased personal responsibility (figure 4).

![Figure 4. Assessment of the "Volunteer movement".](image)
3.5. An important factor of student satisfaction is "international exchange Training for students abroad"

The University has agreements with 50 universities and business schools around the world-exchange of students in the framework of academic mobility: Spain, Italy, Germany, Bavaria, Indonesia, Poland, Lithuania, Finland, Turkey, Lebanon, China, Vietnam, Korea, Argentina, Colombia, Mexico. After the 2nd year, the student chooses a country to study for one year. Abroad, you can stay in a hostel, study, and transfer. Self-paid round-trip flight. Meals are paid by agreement. Academic buildings are within walking distance. The student confirms their knowledge of English with a certificate. The priority direction for the training of the faculty of Information technology is the country of Indonesia, the Institute of Informatics and business Darmajaya [4]. (figure 5).

![Figure 5. Satisfaction "Training students abroad in international exchange".](image)

3.6. An important factor in learning satisfaction is satisfaction with "International interaction and communication in learning processes"

Professors give lectures in English (optional). Students study international communication and politics, communicate with foreign students of the University. Students’ presentations at conferences are conducted in English, SCOPUS level. A new stage of development and career for a student is the ability to communicate at the international level, conduct educational policy, understand the requirements for modern education in foreign countries, the genetics of labor and social relations with foreign countries, social adaptation to the international legislation of other countries in the field of education.

3.7. An important factor of learning satisfaction is "Satisfaction with the conditions of learning in dormitories"

In the hostel for training provided: telephone and Internet; access points for electricity; mentoring; scientific support of the student; proctoring (control of living, cleanliness, order, discipline, food culture, health, life). Students are highly motivated to live in a hostel. The efficiency of using all the resources provided by dormitories makes it possible to save financial and material costs of the student. The student can minimize their labor resources for the period of study. Students have favorable living conditions.
3.8. An important factor in learning satisfaction is "job satisfaction based on learning outcomes"

There are: basic departments; invited teachers from companies-leaders of business and technology; contracts for practical training; long-term cooperation agreements with companies in terms of student employment. Students have a high motivation for employment in enterprises. The defense of the final qualifying work (diploma) is carried out by the student by practical testing of research results in the organization. Graduates possess modern digital competencies and are competitive in the labor market.

4. Conclusion

In conclusion, you can make the following predictions. The priority part of students has a budget education, at the expense of the state. The personnel potential of the University contains a high level of competence of the teaching staff. Students are provided with a wide choice of additional education. The University has an interesting student life (Mr and Miss University events, best research paper, awards and increased scholarships for students). The University has the opportunity to send a student to their chosen country for radiation treatment. Graduates are competitive in the labor market. The University helps students find employment.

Students with disabilities are taught in General groups (if desired), their adaptation and mentoring is carried out. The University holds a leading position in scientific publications at the international level. Graduate and undergraduate students win scholarships and become participants of the international scientific developments. All students in the first year of study have scholarships, then according to the results of training - advanced, government, presidential scholarships. The strength of our University is the strength of our society's cohesion.

According to the results of the social survey, there are the following quotes from students:

- The most important thing is that I study on a budget (for free)! I have a deferral from conscription.
- We get a state diploma (we are proud!).
- I have a presidential (advanced, government) scholarship.
- I can work and have the opportunity to take courses using a virtual educational environment. I can work and study at the same time!
- Conditions have been created for teaching students with disabilities.

In the sociological survey, eight criteria were described:

- "Satisfaction with the socio-psychological climate";
- "Satisfaction with student life";
- Satisfaction with "Educational, methodological and material-technical conditions of training";
- "Volunteer movement";
- Satisfaction with "Teaching students abroad on international exchange";
- Satisfaction with "International interaction and communication in the learning process";
- Satisfaction with "Conditions of study in dormitories";
- Satisfaction with "Employment based on training results".

According to the results of the evaluation of the sociological survey, University students are satisfied with their training. Students are satisfied with the staff potential of teachers. Students are satisfied with employment and career growth. Students are satisfied with the possibility of additional training. A sociological survey of students gave a positive result - "satisfaction with the learning conditions". Russian scientists suggest using technologies in the educational process [5]. Issues of digital processes were considered in the works of the team of authors [6-8]. Modeling of evaluation criteria by students' communication is recognized as a single neural network [9-10]. The social survey was conducted on the instructions of the research Department of the Russian state social University. The research was
conducted in accordance with the contract for the performance of works dated May 15, 2020. The questions of the social survey of students were approved by the Vice-rector for scientific work Vinogradova M.V. The results of the survey are stored in a common database. The survey database is reliable. Big data processing was performed by the performers. The results of big data processing are graphs and charts. Relationships are expressed as a percentage of the total number of students surveyed. The study was performed in accordance with the requirements of the Technical task. This research is of practical significance. Based on the analysis of statistical data from a sociological survey of students, mathematical modeling and system analysis, the technology for evaluating student satisfaction with learning is determined. At the Russian state social University, students are satisfied with the learning conditions.

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