Modern technology for evaluating measures to optimize and improve the working of teacher and staff

S V Veretekhina, S V Krapivka, O L Mnatsakanyan, O I Kireeva, E Iu Romanova, I Iu Galin and S V Pivneva

Russian State Social University, Wilhelm Pieck street, 4, build.1, Moscow, 129226, Russia

E-mail: veretehinas@mail.ru

Abstract. The study was conducted using a natural science approach to assessing the working conditions of teachers and staff. Applied methods: system analysis, mathematical modeling, logical generalization of statistical data of a sociological survey. The introduction describes changes in the regulatory framework of the Ministry of labor of Russia. The requirements for the working conditions of the teaching staff during the period of self-isolation COVID-19 are described. Modern technology for evaluating measures to optimize and improve the working conditions of teachers and staff offers new calculation coefficients of criteria and indicators for evaluating the effectiveness of measures to optimize and improve working conditions. The effectiveness of measures is proposed to be evaluated by four groups of indicators: physical, social, economic, and reputational (reputation). For the resulting analysis of the effectiveness of measures, it is proposed to apply a "Generalized criterion". The generalized efficiency criterion is proposed to be calculated as a generalized Harrington desirability function. It is proposed to use regression methods, expert evaluation methods, and Bayesian methods to predict the effectiveness of the assessment. The simulation is performed using the Monte Carlo method, using Markov chains. The identified modern trends in achieving the University's target indicators and indicators are described. Technologies that reduce time, labor, financial, and material costs are described. Overall satisfaction with the working conditions of teachers and staff was revealed. Modeling and forecasting were performed. New trends in achieving the University's target indicators and indicators are identified and described. Ways to automate processes are suggested. A new motivational approach is described, which forms a new General vector of the University's orientation. The practical significance of the research results is proved. In conclusion, the results of a sociological survey of teachers on satisfaction with working conditions are promised. The directions of development of the University that increase satisfaction with the working conditions of teachers and staff are identified.
requirements of the legal framework. To solve the problem of carrying out analytical analysis of the requirements for working conditions in the education system. New regulatory and legislative documents of the Ministry of labor and social protection of the Russian Federation:

1. Report on the implementation and evaluation of the effectiveness of the state program of the Russian Federation "Accessible environment" [1];
2. Declaration of March 27, 2020-Declaration of the Russian tripartite Commission for the regulation of social and labor relations on the actions of employers and employees in preventing the spread of a new coronavirus infection in the Russian Federation [2];
3. Order of the Ministry of labor of the Russian Federation No. 52 of February 7, 2020 - on the Informatization plan of the Ministry of labor and social protection of the Russian Federation for 2020 and the planning period of 2021 and 2022; [3];
4. Letter of the Ministry of labor of Russia no. 11-3 / 10/B-576 dated January 28, 2020 "On approval of the number of organizations subject to an independent assessment of the quality of conditions for providing services (to the Executive authorities of the subjects of the Russian Federation in the field of social protection)\Letter of the Ministry of labor of Russia no. 10-9 / 10/B-140 dated January 14, [4];
5. Letter of the Ministry of labor of Russia no. 10-9/10/B-140 dated January 14, 2020 "To the heads of organizations under the jurisdiction of the Ministry of labor of Russia) [5];
6. The order of the Ministry of the Russian Federation No. 4 of January 9, 2020 - On the monitoring of the implementation of measures for the organization of retraining and advanced training of women on leave to care for a child under three years of age and women with children of preschool age, not employed and applied to the employment service, within the framework of the Federal project "Promotion of women's employment – the creation of conditions of preschool education for children under three years" national project "Demography" [6].

The analysis of new regulatory and legislative documents of the Ministry of labor of Russia revealed trends in remote interaction between teachers, staff and students during the COVID-19 period. Orders of the Ministry of labor and social protection of the Russian Federation set requirements for the Informatization of society. The automated system "Ensuring the performance of functions in terms of demographic policy and population protection "is being put into operation. The Ministry's staff is being tested to obtain the title of expert on "special assessment of working conditions". The automated accounting system "Humanitarian aid" and the information system "Analysis and control in the field of labor protection "are being put into operation. The functionality of the electronic document management information system and electronic archive is being improved. The development of the telecommunications structure of external communications is carried out [7]. The analysis of the Letter of the Ministry of labor of Russia shows the need for an independent assessment of the quality of services. The letter specifies the coverage of the regions of the Russian Federation, including 85 Autonomous regions, territories, and republics. The total number of organizations to be evaluated according to statistics is 5,370 organizations [4]. The analysis of the document letter of the Ministry Of labor of the Russian Federation No. 10-9/10/B-140 defines the requirements for submitting information about income, expenses, and property [5]. The Declaration of the Russian tripartite Commission on regulation of social and labor relations defines the plan of priority measures to ensure sustainable economic development in the conditions of COVID-19. Information centers and the website "Stopkoronavirus.RF" [8], "Myvmeste2020.RF of the Russian Federation" [9]."Online inspection. Of the Russian Federation" [10]. A social survey of the population "all-Russian database of vacancies "Work in Russia" is conducted [11]. Government programs provide training for women. The category of women is women who have children of preschool age and do not have a job. Together, all legislative documents regulate improving the educational process of the population, improving social and labor relations, automating management functions, evaluating the quality of services provided, and developing information and communication technologies. The national Demography project contains five Federal projects. The national project defines financial support for families when children are born; promoting women's employment; improving the quality of life of older people. Development of
Wellness programs "Active longevity", "Healthy lifestyle", examinations and medical examinations, prevention of cognitive disorders. Development of programs for the care of elderly and disabled citizens [6]. The regulations on the labor protection service in the system of the Ministry of education of the Russian Federation require maintaining the nomenclature of labor protection cases. The regulation is of a recommendatory nature about the organization of the labor protection service. There are new trends in the education system: online testing for admission to higher educational institutions; the student's dress code is being formed; professional development and retraining for the teaching staff of higher educational institutions. It is planned to cancel the bachelor's degree in the Humanities departments of higher educational institutions. The period of study of pedagogical universities and Humanities faculties (history, Philology, journalism) will last up to 5 years and will be transformed from a bachelor's degree to a specialty (full higher education). In public universities, the submission of documents by applicants to be conducted online. The Ministry of education is discussing the Bologna system of education in relation to the Russian Federation and training areas.

2. Theoretical framework

Government measures are aimed at modernizing the education system and the labor protection system. The attitude of professors and teachers to the labor protection system is changing. The main goal of the study is to identify satisfaction/dissatisfaction with the labor protection system during the period of temporary self-isolation, in the conditions of COVID-19. Higher educational institutions (universities) are interested in an effective labor system. The teaching staff of the Russian state University conducts training using distance technologies. A survey of teachers was conducted to assess their satisfaction with working conditions. The questionnaire questions were developed and approved. Research work was carried out on the topic "Evaluating the effectiveness of measures taken to optimize and improve the working conditions of teachers, administrative staff and students".

The main purpose of the study is to develop criteria for evaluating the effectiveness of measures to optimize and improve working conditions. Identification of reserves growth to reach international level of competitiveness of the educational and scientific-research works of the University. Conducting a systematic analysis of the results of the audit of working conditions of teachers and staff. The object of the research is the servicing of educational activities of the staff of the University - teachers, administrative staff. The subject of the research is the development of a new technology for evaluating the effectiveness of measures taken to optimize and improve the working conditions of teachers and staff. The main objectives of the study include:

1. analytical review of working conditions requirements;
2. development of questionnaires for automated survey of teachers and staff;
3. conducting a social survey;
4. summarizing survey results in a common database;
5. analysis of the results of surveys in the shared database;
6. development of measures to optimize and improve the working conditions of teachers, administrative staff and students;
7. application of "Lean manufacturing" technology;
8. application of the "5S" technology;
9. the application of "Exchange of ideas" technology;
10. development of measures to attract employees and students to the use of new technologies;
11. development of measures to attract University students to perform labor functions of University processes;
12. development of measures to attract students to international research projects;
13. development of measures to attract students to register scientific activities (patent);
14. preparation of research materials for publications.

The University needs a high rating. A research team of teachers has developed a new technology to improve the rating. The technology includes evaluation of measures to optimize and improve the
working conditions of teachers and staff. The following technologies have been proposed to optimize working conditions:

The "Lean manufacturing" technology is the formation of the maximum benefit from the development of educational services. The development of competitive digital educational content. Lean manufacturing technology is a new philosophy that changes the relationship between the participants in the process: teacher-student-employer. Lean manufacturing technology creates new values and new knowledge. In this technology, the teacher has an automated system for monitoring the educational process of students. The automated system generates reports on various parameters: lecture attendance; knowledge rating for a sample of disciplines; overall academic performance; student's scientific achievements; student's digital footprint at the University. Student training becomes practice-oriented, tailored to the needs of the employer. The employer receives a specialist with a set of required competencies. This reduces the time spent on General training. The orientation vector is aimed at the employer's specialization. Lean manufacturing technology has the following tools:

1. involvement of staff and teachers;
2. standardization of the educational process;
3. standardization of digital content;
4. visualization of current time schedules of the educational process in the student's personal account.

All the above-mentioned lean production management tools are integrated into the educational process, allowing you to optimize training, quickly form the desired vector of orientation, which eliminates the risks of dissatisfaction with the student's learning and temporary, labor, and financial losses. "5S" technology is an indicator of the University's available infrastructure. The 5S system is an effective method for organizing and rationalizing the work space of University departments. The main objectives of the organization of teachers' workplaces are ergonomics of the working space, the smallest trajectory of movement through the buildings of the University, free access to the information database, free access to library resources, guaranteed high-quality communication and the Internet. "5S" technology allows you to reduce time, labor, and financial losses. The "5S" technology includes 5 components:

- **sorting, collating** - evaluating all items, tools, equipment, office supplies, materials, software, and databases in the workplace based on their usefulness and frequency of use. Search and release of tools that are not needed or in little demand.
- **compliances with the order** - creating a flexible and transparent, visualized system for placing all the tools used based on sorting.
- **keep clean** - creation of basic rules for maintaining the cleanliness of the workplace during the period of COVID-19 infection. Monitoring the cleanliness of premises, the use of disinfectants, monitoring the health of students and teachers.
- **standardization, harmonization, rationing** - development and implementation of standards for all the functions of the teaching staff, using standardized forms of progress reports, standardized forms of reports, standardized methods of performing final qualifying work; standardized process of developing electronic digital content, etc.
- **development, improvement** - formation of the 5S corporate culture. Staff and teachers follow the instructions on occupational safety and health. Delegation of authority. Independence of management decision - making. Responsible for the execution of the instructions of the manual. The philosophy of improving the corporate culture of 5S is to solve problems together, optimize work, eliminate all types of losses in educational, scientific, social and educational, financial and economic activities. Maintaining a friendly social and psychological climate in the team. Popularization of the effect of the introduction of the "5S" Technology through various notification channels: information stands, publications on the website, social networks, youtube channel. Applying moral incentives to employees and students using a new corporate culture and promoting it. Creating a positive image of the University. The "exchange of ideas" technology is an opportunity to Express yourself in the learning process. Students and teachers take the initiative, develop and monetize the project. The motivation is to get new
digital content, earn bonuses, innovate, and get a patent. The "exchange of ideas" technology has several stages (table 1).

Table 1. Description of the stages.

| The name of the stage             | Description of the stage                                                                 |
|-----------------------------------|------------------------------------------------------------------------------------------|
| Design - creation                 | The first stage is the design of the idea, know-how (project). Filling in the project document form, creating a list of responsible persons |
| Agreement                         | The second stage is discussion of the project. The feasibility of applying the project in practice is discussed. The project is tagged. An expert opinion is formed. Automated distribution of the developed documentation is carried out |
| Selection                         | The third stage is the funnel. The project goes through the procedures of voting, testing, examination, implementation, and operation |
| Financing                         | The fourth stage is the announcement of the project, search for sources of funding |
| Advertising and marketing         | The fifth stage is the publication of project research materials at international scientific and practical conferences. Presentations by students and teachers. Increasing the level of international recognition of the University's educational and research activities. |
| Registration of individual achievements | The sixth stage - registration of individual achievements, patenting |
| Saving and archiving              | The seventh stage is archiving the project. |

The following conclusion can be drawn from table 1. The "exchange of ideas" technology allows you to collect new projects, monetize the project or assign a patent.

3. Results and discussion

To assess the feasibility of implementing technologies in the University environment, a social survey of teachers was conducted. The survey is aimed at identifying the need for practical application of technologies "Lean manufacturing", "exchange of ideas", "5S".

A system of indicators has been developed to assess the effectiveness of measures to optimize and improve the working conditions of teachers and administrative staff. A system of indicators for evaluating the effectiveness of measures to optimize and improve the working conditions of teachers, administrative staff and students. The effectiveness of measures is assessed by four groups of indicators: physical (changes in working conditions), social, economic, and reputational (reputation).

3.1. Physical indicators

Physical indicators and corresponding changes in the state of working conditions are shown in table 2.

Changes in the state of working conditions for their characteristic factors are estimated by the relative difference between the results achieved and predicted, or by comparing relative indicators that characterize the degree of compliance of factors with the maximum permissible or specified levels. All indicators are relative, values 0-1.
Table 2. Physical indicators.

|      |                                                                                           |
|------|--------------------------------------------------------------------------------------------|
| K_{11}| change in the number of computers, office equipment, vehicles, classrooms, offices, and work spaces that meet the requirements of labor safety standards and other regulations; |
| K_{12}| improvement of sanitary and hygienic indicators:                                           |
|      | 1) reducing the content of harmful substances in the air;                                  |
| K_{13}| 2) improving the microclimate;                                                           |
| K_{14}| 3) reducing noise, vibration, and radiation (electromagnetic, infrared, etc.);            |
| K_{15}| 4) improved illumination;                                                                 |
|      | • improvement of psycho-physiological parameters:                                         |
|      | 1) reducing physical activity and injuries;                                               |
| K_{16}| 1) reduction of neuropsychic stress, including monotony of work;                           |
|      | • improvement of aesthetic indicators;                                                    |
| K_{17}| 1) rational layout of workplaces;                                                         |
| K_{18}| landscaping of premises and territories;                                                   |
| K_{19}| color design of the interior.                                                             |
| K_{20}| using 5S technology                                                                        |
| K_{21}| application of "Lean manufacturing" technology"                                            |

3.2. Social indicators
Social indicators that characterize the work of the teaching staff are shown in table 3.

Table 3. Social indicators.

|      |                                                                                           |
|------|--------------------------------------------------------------------------------------------|
| K_{21}| physiological, affecting the functional state of the human body under the influence of industrial activity; |
| K_{22}| psychological indicators (features of mental activity and personality at work)            |
| K_{23}| labor activity, which characterizes the degree of manifestation of physical and psychological abilities by an employee in the course of his professional activity; |
| K_{24}| the level of professional and General morbidity of employees associated with adverse working conditions; |
| K_{25}| the number that meets the regulatory requirements and the reduction of the number of people in adverse conditions; |
| K_{26}| staff turnover due to dissatisfaction with working conditions;                             |
| K_{27}| level of job satisfaction;                                                                 |
| K_{28}| prestige of the profession                                                                |

3.3. Economic indicators
Economic indicators that characterize the work of the teaching staff are shown in table 4.

The calculation of the economic efficiency of implementing measures to improve working conditions and labor protection at the enterprise is made in order to:

- determining the actual economic efficiency of the completed activities;
• economic justification of planned activities, including the choice of the optimal design solutions;
• calculating the cost of bringing working conditions in the workplace in line with the requirements of standards.

**Table 4. Economic indicators.**

| K<sub>31</sub> | benefits and compensation for persons employed in jobs with harmful working conditions; |
| K<sub>32</sub> | benefits for illness caused by work-related or occupational diseases, accidents at work |
| K<sub>33</sub> | expenses for retraining of personnel due to their turnover caused by unfavorable working conditions; |
| K<sub>34</sub> | reduced productivity due to temporary disability of the employee. |

Economic justification of measures to improve working conditions is made by comparing the results of measures with the costs of their implementation. For this purpose, the main indicators presented in table 5 are calculated.

**Table 5. Main indicators for evaluating the effectiveness of measures to optimize and improve.**

| Title | Appointment |
|-------|-------------|
| • the economic effect (absolute indicator) obtained as a result of reducing the incidence of diseases and injuries, as well as saving the cost of preventive measures. | • to justify the expected (calculated) effect of scientific and design solutions to improve working conditions and safety; |
| • the level of economic efficiency of measures to improve working conditions the ratio of the economic result from reducing the frequency and duration of diseases and injuries, as well as from improving performance to the cost of improving working conditions; | • to select the most effective option of measures that differ in their impact on the performance of the production environment; |
| • comparative economic efficiency | • for economic evaluation of implemented measures. |
| two or more events are determined taking into account the time factor to select the option of events that ensure the achievement of the required state of the production environment with minimal costs. | • to identify the dynamics of cost effectiveness for improving working conditions |
| | • to compare estimated and actual cost effectiveness with approved standards |

3.4. **The indicators of reputation**

The reputation indicator that characterizes the work of the teaching staff is shown in table 6.

**Table 6. Reputation indicator.**

| K<sub>41</sub> | the number of negative reviews related to working conditions to the total number of negative reviews. |
Indicators are calculated based on data obtained by processing large data from a sociological survey. It is planned to apply a "Generalized criterion" for the resulting analysis. The generalized efficiency criterion is proposed to be calculated as a generalized Harrington desirability function. The objectivity of the results is due to the fact that the desirability function is built on the basis of logistic (S-shaped) curves.

\[ K_{11} = w_1 K_1 + w_2 K_2 + w_3 K_3 + w_4 K_4, \]

then, the Harrington desirability function

\[ d = \exp(-\exp(-K_{11})) \]

The interpretation of the generalized criterion is given in table 7.

Table 7. Interpretation of the generalized criterion.

| advisability, expediency | Rating on the desirability scale |
|--------------------------|---------------------------------|
| excellent                | 0.80<d<1.00                     |
| good                     | 0.63<d<0.80                     |
| passable                 | 0.37<d<0.63                     |
| badly                    | 0.20<d<0.37                     |
| pretty bad               | 0.00<d<0.20                     |

Measures to improve the organization of workplaces. The theoretical basis for conducting events is the classical theories of quality management: Maslow's pyramid of needs hierarchy, leadership theory, Viktor Vroom's theory of expectation, and the theory of designing socio-technical systems. The first event involves the introduction of "5S" technology for more efficient organization of staff jobs. According to the results of the big data analysis of the sociological survey of teachers, the following data is available. The graph of dependencies of the "5S" technology evaluation is shown in figure 1. The graph shows satisfaction with working conditions in the workplace, has five grading ratings (Yes-meets (100%), often – meets (80%), sometimes meets (50%), rarely meets (30%), not satisfied – (10-15%). The social satisfaction survey questionnaires revealed the relationship between satisfaction with the schedule and quality of cleaning of premises and lecture halls; compliance with the rules of hygiene and cleanliness of the workplace; the presence of sound insulation in the premises; the presence of markings on equipment, computers and software; ergonomics of furniture and equipment placement in space, etc. The questionnaire has 35 questions. The survey was conducted anonymously, and there is no identification of respondents.

Using the formula 1 and the numerical data carry out the calculation of the generalized desirability function of Harrington.

Calculation

\[ K = (0.281 + 0.135 + 0.42 + 0.335 + 0.32 + 0.9)/6 = 0.396833, \text{ then } d = 0.510458422 \]

Using the criteria data in Table 6 "interpretation of the generalized criterion is given", the following indicator is available: 0.510458422. The resulting result falls within the numerical limit: TABLE ROW passable 0.37<d<0.63. Thus, at the time of the sociological survey of teachers on satisfaction / dissatisfaction with working conditions, according to the calculated coefficient of 0.510458422, the effect of the implementation of the "5S" system is estimated as satisfactory. The second event involves the introduction of the "exchange of ideas" system. The second event is aimed at implementing more...
productive interaction between the management and employees of divisions within the framework of the "exchange of ideas" concept in order to take into account the wishes for the organization of workplaces.

Figure 1. Question: Evaluate the use of the "5S" technology.

Modeling and forecasting. It is proposed to use regression methods, expert evaluation methods, and Bayesian methods to predict performance estimates. The simulation is performed using the Monte Carlo method, using Markov chains. The practical significance of the expected results of scientific research is based on the analysis of statistical data, mathematical modeling and system analysis of the generated data. The data of the sociological survey on satisfaction / dissatisfaction with the working conditions of teachers and staff showed a positive assessment. The generalized indicator is satisfaction (0.37<d<0.63).

The obtained research results are considered reliable. The applied methods and technological techniques include the following five technological techniques:

1. modern methods of mathematical modeling and programming;
2. modern methods of Big Data information processing and knowledge base formation;
3. modern methods of system analysis;
4. modern methods of data mining;
5. modern ways to visualize information, in accordance with the requirements and recommendations Of the government program of the Russian Federation on the Digital economy and the National technology initiative. Research results are used in electronic educational content of educational disciplines. The developed content meets the requirements of modern standards of the Federal state educational system (FSES) 3++:

   1. "Scientific research in professional activity" "Interactive electronic technical documentation", "Implementation of automation tools for documentation processes", "Distributed databases and network applications", "administration of application software" - for training areas 09.04.01 "computer Science and engineering", master's degree.

   2. Application software administration", "coding Methods", "Queueing Systems" - for training areas 01.04.02" Applied mathematics and computer science", master's degree.

   3. Theory of information security and methodology of information protection", "Mathematical foundations of information processing" - for training areas 10.05.05 "Security of information technologies in law enforcement", specialty.

Justification of the choice of research methods. The following methods are used for solving the analysis of big data (factual and metadata) that characterize entities:

1. methods of statistical analysis (O I Kireeva)
2. methods of decomposition and aggregation of system analysis (E Yu Romanova),
3. methods of fuzzy neural network aggregation (O L Mnatsakanyan)
4. applications of artificial intelligence algorithms (S V Veretekhina and S V Krapivka)
Applied methods of statistical analysis of multidimensional data include: factor analysis; discriminant analysis (discriminant of a polynomial); cluster analysis; multidimensional scaling; quality control methods.

### 4. Conclusions

Expected results and contribution to achievement of target indicators and indicators of University identified the following trends:

**Trend 1.** Develop criteria for evaluating the effectiveness of measures taken to streamline and improve the working conditions of teachers, administrative staff and students gives the opportunity to assess the effectiveness of the proposed activities.

**Trend 2.** Developed mathematical tools for evaluating physical, social, economic, and reputational indicators. The "Generalized indicator" criterion was developed.

**Trend 3.** Proven calculation formulas are offered. The paper describes the application of Maslow's hierarchy of needs pyramid, leadership theory, Viktor Vroom's theory of expectation, social and technical systems design theory, Harrington's desirability theory, regression methods, expert evaluation methods, Bayesian methods, and Monte Carlo modeling using Markov chains.

**Trend 4.** The feasibility of using technologies "Lean production", "exchange of ideas", "5S" has been proved.

**Trend 5.** The reduction of time, labor, financial and material costs was revealed.

**Trend 6.** The technology of forming a new philosophy of knowledge, a new corporate culture, a new approach to management is proposed.

Based on the results of research work, it is proposed to include the calculated coefficients of the generalized criterion and the main indicators for evaluating the effectiveness of measures to optimize and improve the working conditions of teachers in the effective contract of the University's teaching staff. Consider the possibility of using remote work of teachers and staff. Enable the use of all types of electronic signatures in the University's electronic document management system. The technology exchange of ideas is retransmitted for the preparation of grants. Raise the University's rating for scientific publications. Use the "Exchange of ideas" technology projects to receive state subsidies and funding for scientific projects. Carry out informational coverage of the results of the developed evaluation of the effectiveness of the proposed measures to optimize and improve the working conditions of teachers and staff.

In conclusion, it should be noted that research results have shown new dependencies in the student – teacher - employer relationship. All the proposed technologies are aimed at reducing time, labor, financial, and material costs. Applying the coefficients of the generalized criterion and the main indicators for evaluating the effectiveness of measures to optimize and improve the working conditions of teachers will create new ways of motivation. The new motivational approach forms a new General vector of orientation. The direction vector is shifting towards remote work and electronic interaction.

Satisfaction with the working conditions of teachers is at an average level, because the generalized indicator - satisfaction (0.37<d<0.63) is at an average level. This suggests that in the future, teachers and staff will need to increase their electronic functions until they are fully satisfied with their working conditions. Most of the reporting documentation on the workload of faculties should be generated automatically and addressed to the intended purpose. Automation of processes frees up the time and labor resources of the teacher, which he directs to finding new projects. New projects meet the requirements of the employer. An additional source of funding for the University is state subsidies and grant funding. A high international image of the University is necessary to increase the probability of attracting funding for project and research activities. We express our gratitude to the scientific team of authors for conducting research, the staff of the information Department, and the University management. These studies are of practical significance and are prepared for publication at the international level. Russian scientists suggest using technologies in the educational process [12]. Issues of digital processes were considered in the works of the team of authors [13]. Students' communication is recognized as a neural network [14]. The social survey was conducted on the instructions of the
research Department of the Russian state social University. The conducted natural science research revealed satisfaction with the working conditions of teachers and staff. An important factor is the release of a temporary resource. Lecturers direct intellectual resources to new research projects. Projects are becoming interdisciplinary and international. The research involves joint foreign teams of authors, for example, Russia - Bulgaria [15]. New knowledge is formed through the efforts of domestic and foreign authors.

References

[1] Report on the implementation and evaluation of the effectiveness of the state program of the Russian Federation "Accessible environment" (https://mintrud.gov.ru/docs/mintrud/handicapped/269)

[2] Declaration of March 27, 2020-Declaration of the Russian Tripartite Commission for the Regulation of Social and Labor Relations on the Actions of Employers and Employees in Preventing the Spread of a New Coronavirus Infection in the Russian Federation (https://mintrud.gov.ru/docs/1369)

[3] Order of the Ministry of Labor of Russia 52 February 7, 2020 (https://mintrud.gov.ru/docs/mintrud/orders/1387)

[4] Letter of the Ministry of Labor of Russia 11-3(10/B-576) January 28, 2020 (https://mintrud.gov.ru/docs/mintrud/analytics/160)

[5] Letter of the Ministry of Labor of Russia 10-9(10/B-140) January 14, 2020 "To the Heads of Organizations Under the Jurisdiction of the Ministry of Labor of Russia" (https://www.garant.ru/products/ipo/prime/doc/73344673)

[6] Experimental Project of Russia "Demography" (https://mintrud.gov.ru/ministry/programms/demography)

[7] Order of the Ministry of Labor of Russia 52 February 7, 2020 (https://mintrud.gov.ru/docs/mintrud/orders/1387)

[8] Stopkoronavirus.RF (https://xn--80aesfpebagmfble0a.xn--p1ai/)

[9] Myvmeste2020.RF (https://xn--2020-f4dsa7cb5c17h.xn--p1ai/)

[10] Onlinespecial.RF (https://xn--80akibcpdbetz7e2g.xn--p1ai/)

[11] All-Russian job database "Work in Russia" (https://trudvsem.ru/)

[12] Eliseeva D Y, Fedosov A Yu, Agaltsova D V, Mnatsakanyan O L and Kuchmezov K K 2020 The evolution of artificial intelligent and the possibility of its application in caber games. Amazonia Investig 9(28) 123-9

[13] Veretekhina S V, Karmishin A M and Kozlov A D 2020 Analysis of initial and boundary conditions for convective diffusion of vapors and aerosols in closed volumes Eurasia J Biosci 14(1) 995-1002

[14] Veretekhina S V, Karyagina T V, Kornyushko V F, Burlyaeva E V, Kolybanov K Yu, Potekhina E V and Shmakova E G 2018 Informational system for monitoring the state of the natural environment according to the Russian satellite Ekoloji 27(106) 461-9

[15] Veretekhina S V, Pankov V and Krapivka S V 2020 Comparative characteristics of Russian and Bulgarian soil control methods EurAsian Journal of BioSciences Eurasia J Biosci 14 1359-66