

Received: 26 June 2021

Revision received: 25 October 2021

Accepted: 29 January 2022

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www.jestp.com

DOI 10.12738/jestp.2022.1.0018 ♦ January 2022 ♦ 22(1) ♦ 222-233

Article

Impact Assessment of Internal and External Factors on the Effectiveness of the Russian Education System

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Abstract

This study aimed to identify the internal and external problems faced by the national education system in Russia. The study adopted a quantitative, explorative research design, that used the questionnaire survey method to collect data among teachers of general secondary schools. The sample of the study comprised 300 respondents, 30% male and 70% female, from among secondary educational institutions teachers of various regions of the Russian Federation. These participants were the real eyes that directly affected the quality of education, and were responsible for the personal development of the younger generation. The urgency of the article lies in the fact that a need was felt to demonstrate the problems faced by modern Russian education due to the COVID-19 pandemic and the introduction of digital learning. The study used the survey method, the method of generalization and analysis of the results of the questionnaire, the method of theoretical analysis, and scaling of research results. The study found that by recognizing the connection between the implementation of digital technologies in the framework of schools and the effectiveness of the national education system, such measures can be worked out to reduce the negative impact of internal and external factors on the education sector. The study would prove to be a good contribution to bringing reforms in the Russian education system. It is recommended that the educational directorate should focus more on teachers' training of digital platforms.

Keywords

Education, digitalization of education, protectionism, general education, teachers.

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Citation: Gapsalamov, A., R., Bochkareva, T., N., Vasilev, V., L., Akhmetshin, E., M. (2022). Impact Assessment of Internal and External Factors on the Effectiveness of the Russian Education System. *Educational Sciences: Theory and Practice*, 22(1), 222 - 233. <http://dx.doi.org/10.12738/jestp.2022.1.0018>

The present world is facing colossal political, economic and technological challenges. Under their influence, the education system is also changing, which is forced to adapt to new conditions. Its stagnation or conservatism has turned into a loss of the state's weight in the international arena. At the same time, one can observe a different speed of restructuring process in the educational sphere, which causes disputes in the public environment. Education is one of the most conservative social institutions with a certain reputation. In one respect, this is certainly welcome, because modern tendency in changing of the content, organization and structure of the educational process should be considered, weighed and only after that introduced into the educational process. On the other hand, the world has become complex, dynamic, changing. The world demands the same from each participant. Not responding to the challenges of time means becoming uncompetitive, stagnant and static. Undoubtedly, new technologies, processes and trends have an impact on educational processes.

Serious criticism about the national education system can be heard from everywhere (Darmodekhin, 2012). Some support the Soviet - knowledge system, where the teacher imparts information and teaches algorithms for working with it. Knowledge is acquired in this case once and for a lifetime. The learning paradigm consists in transferring deep, solid academic knowledge to the learner (educational object). The assignments are designed in such a way that they develop cognitive abilities. Reliance on knowledge displaces values and meanings from the educational process, deprives it of spirituality. Others favor an activity-based approach based on building feedback. The activity approach consists in the fact that it is necessary to teach students to learn, to teach them to acquire knowledge and check their reliability.

The Russian education system has been periodically reformed since the 1990s, when the country began to integrate with the international educational system. Profound changes in political, economic and social life further led to changes in education. In the early 2000s, the country followed the path of integration with Europe and entered the Bologna process. The optimization of educational institutions has begun in the country by predominantly reducing them and improving funding. In the Federal State Educational Standards of all levels, it is the system-activity approach that is aimed at personal development. Despite different approaches, society is undoubtedly interested in qualitative changes in Russian education. There is an understanding that inaction on this issue can lead to its stagnation and further serious lagging behind, loss of competitiveness (UNESCO, 2005).

Russia, like many others countries, is currently experiencing an acute phase of COVID-19 pandemic and is trying to exist productively in new conditions. In the spring of 2020, all schools in Russia functioned in distance mode. Teachers were given the opportunity to master various digital platforms and tools. The emergency transition to new working conditions could not but affect the work of teachers and entail a number of problems. There was an understanding of the need to transform traditional educational mechanisms, the transition to new models and technologies. This is also facilitated by the digitalization process, which increasingly affected public relations. However, today many research experts are wary of modern processes, see in them a threat to the future national education (Department of International and Regional Cooperation of the Accounting Chamber of the Russian Federation, 2020).

In particular, the current study, like all its previous versions in the same trend, presented the task of the Russian Foundation for Basic Research (Almaz Gapsalamov et al., 2020; AR Gapsalamov et al., 2020; A. R. Gapsalamov, E. Akhmetshin, et al., 2020; A. R. Gapsalamov, E. M. Akhmetshin, et al., 2020) and showed possible negative trends and consequences digital transformation. The challenge was to see whether these tendencies were understood directly by the participants in the educational process, that is, the teachers. It is they who, at their level, shaped the future generation of educated people; the quality of the educational process depends on them.

In this regard, the purpose of the study was determined - to analyze the problems of modern Russian education during the pandemic. The research was carried out on the basis of a questionnaire survey of more than 300 teachers from different regions of the Russian Federation. The study determined the relationship between the effects of the pandemic on the national education system and the active digitization of this system. The study also considered in detail the process of organizing education during the pandemic 2020 and its main problems in general education organizations.

Literature review

The problems caused by changes in education, society and man in conditions of modern realities such as globalization, digitalization of the economy, the coronavirus pandemic are of concern to many scientists from different countries. Guryanova et al. (2019) analyzed the impact of digitalization on a person and presented the resulting problems of ideological, psychological and social nature. The authors also analyzed the relationship between the existing and digital worlds, the human mind and artificial intelligence, and came to the understanding that the relational system in a digital society was becoming a serious problem. In order to prevent the spread of consumer ideology and social degradation, it was necessary to identify the importance of the right human values - equality, humanism, and also apply them.

Scientists are aware of the importance of the changes taking place in the modern world. There comes an understanding that new trends carry not only qualitative changes, but also pose a certain threat. In a research by Vodenko (2019), the main threats posed by digitalization are analyzed, including risks for the education system. The author asserts that state regulation of the education system can ensure national security. Using the example of Russia, the author shows the current problems and the main prospects for the development of state regulation of the Russian higher education system. The central idea is the need to reform the education sector as soon as possible, which will become one of the main factors of the national security system of the state. Approximately similar aspects are also seen in a few other studies (Alekseev et al., 2018; Ardito, 2018; Biranvand et al., 2019; Ismagilov et al., 2019; Kildeeva et al., 2021; Zmiyak et al., 2017). Despite the danger of exposure to negative factors of digitalization, scientists urge to take advantage of the achievements of the digital world.

The problems of inheritance of the world cultural heritage in the context of digitalization were highlighted by Cao et al. (2018). Due to the growth of the world cultural heritage and its sensibility, the question of the effectiveness of its management and the use of appropriate technologies to achieve sustainable development of the protection and inheritance of cultural heritage has become acute. The scientists consider the application of integrated strategies and digital technologies of the world regional network for the protection of cultural heritage, put forward some sustainable proposals.

A similar view is shared by Cunha et al. (2020), who believed that education was under enormous threat from digital trends. In a world of transformations caused by digital technologies, education was facing a paradigm shift and was exposed to vulnerabilities and threats of open education models. According to the authors, the impact of digitalization created problems, but at the same time opened up unprecedented opportunities for democratization and accessibility. The transformation process of open universities supports the reference of deep inclusion of pedagogical and technological innovations based on research, and look for new strategies for organizing and defining quality in order to guarantee its relevance and leadership in the pursuit of mass higher education.

As for the ethical risks of digitalization of education, Blinov et al. (2019) believe that they are due to the accumulation of large arrays of personal information about students. We are talking about the emerging risks associated with the transparency of this information for various subjects involved in the educational process (teachers, parents, administration, digital footprint analysts, other support staff), as well as with its possible leaks. Thus, when developing digital educational platforms and systems, special attention must be paid to information security issues, both in technical terms and in organizational and pedagogical terms (determining the circle of persons / organizations that have access to this or that information, the formation of appropriate contractual mechanisms, etc.). Moreover, Kovtunencko (2019) noted that one of the risks associated with the digitalization of education was the substitution of digitalization for the education and training of a person, while another view was of the formation of socially and professionally significant competencies in demand by the digital society (Blinov et al., 2019).

Mok and Leung (2012) discovered that the digital divide prevents the growth of the economy. The gap between different social groups (namely, "having" and "not having") in access to information and communication technologies and their different use was revealed in China, Taiwan and Hong Kong. To prevent damage to the social structure within the country, as well as to strengthen international competitiveness, the authors propose to study the policy and strategy of bridging the digital divide.

The problems of digital transformation in higher education are also discussed by [Ahel and Lingenau \(2020\)](#). The authors believed that digitalization can be the key to expanding the scale of students' access to education in the interests of sustainable development. The concept of the "Virtual Academy for Sustainability" was presented as a successful project at the University of Bremen, which taught and promoted sustainable development through digital media.

These studies indicate general trends about the problems of education in the world. This confirms the relevance of our research on the problems of modern Russian education.

Method

- *Research design*

The study adopted a quantitative, explorative research design, that used the questionnaire survey method to collect data among teachers of general secondary schools. The survey aimed to examine the problems of modern education in Russia in the conditions of digitalization of the economy in the post-pandemic period. The research design also used the methods of synthesis, deduction and induction, commonly used in logical and historical processes, or to search causal relationships applying the law of dialectics.

- *Sampling*

The research locale of the study covered the entire Republic of Tatarstan, with the research population covering all 45 municipal districts of Tatarstan, as well as from the regions of the Russian Federation - Udmurtia, Mari El, Bashkortostan, Crimea, Chelyabinsk, Samara and Orenburg. The sample size was 300 people, 30% male and 70% female. The average age of the respondents was 46 years. All participants had participated in the XI International Festival of School Teachers (IFST) at the Kazan Federal University, Elabuga Institute of KFU on August 17-19, 2021. About 17% of respondents held administrative positions in educational organizations (methodologist, head teacher, director, etc.), while 83% were teachers. All 100% participants had received higher education and their work experience varied from one year to 44 years.

- *Research instrument and procedure*

The survey instrument was administered on an automatically created Google spreadsheet. The questionnaire included 8 questions concerning the problems of modern education in Russia in the conditions of digitalization of the economy in the post-pandemic period as shown in [Table 1](#). The survey was conducted for three days at IFST, using paper pencil format for writing answers. A written permission was also obtained from the respondents to use their personal data. There were no people who refused to take part in the survey.

Table 1. *Questionnaire used to identify problems of the modern education system in Russia*

Question	Variants of the answer
Personal data (age, gender)	Age: _____ Gender: _____ (M/F)
Place of work	_____
Locality	– City _____ – Village _____
Work experience	– From 1 year to 5 years: – From 5 years to 10 years: – From 10 years to 20 years: – over 20 years:
1. How do you assess the effectiveness of the national education system on a 5-point scale:	– bad – unsatisfactory – satisfactory – well – perfectly

Question	Variants of the answer
2. The advantages of the modern system of national education include:	A) globalization B) practice-oriented C) selectivity of financing D) high performance E) other:
3. What are the most serious difficulties experienced by the national education system?	A) educational and methodological problems B) organizational C) financial D) institutional E) philosophical and moral (educational) F) other:
4. Which elements of the national educational system need to be radically changed within the country (select one or more answer options):	A) the financing system B) organization of educational and methodical work C) functional and organizational mechanisms of the education system D) regulatory framework E) nothing F) other:
5. Which elements of the national educational system need to be radically changed by external influence (highlight one or more possible answers):	A) financing of projects/grants/competitions B) activities of foreign educational organizations C) the activities of foreign civil societies engaged in educational or grant activities D) to protect the information field from external educational resources E) nothing F) others:
6. Does the Russian educational system remain effective in the face of modern challenges (coronavirus, digitalization, globalization, etc.)	A) yes, in full B) yes rather than no C) rather no than yes D) No E) I find it difficult to answer
7. Is it necessary to pursue an anti-globalist and protectionist policy in the field of education in the conditions of modern challenges in Russia?	A) yes B) not sure C) no
8. Describe with three epithets the changes that have happened to you in the professional sphere since 2020 (example: fatigue, joy, discovery)	1. 2. 3.

- *Data analysis*

After the survey, the data was systematized to prepare analysis and survey results. The responses were exported to the Microsoft excel program, which used statistical methods to analyze the data. The information obtained was presented graphically. The interpretation of the information was carried out using general scientific research methods. The next stage was the processing of the results using correlation analysis. At the same time, the main method of analyzing statistical data was the method of comparison. This is explained by the fact that any indicator of the level of development of the phenomenon itself is insufficient and should be considered in connection with, in comparison with another similar or interrelated indicator, which is taken as the scale of the assessment.

Based on the analysis of questionnaires, the relationship between the consequences of the COVID-19 pandemic and the problems of modern education were shown.

Results

The results of the survey principally revealed that the effectiveness of the national education system, according to respondents, was at a satisfactory level (61%), at a good level (28%), at an excellent level (8%) and at an unsatisfactory level (3%) (Figure 1).

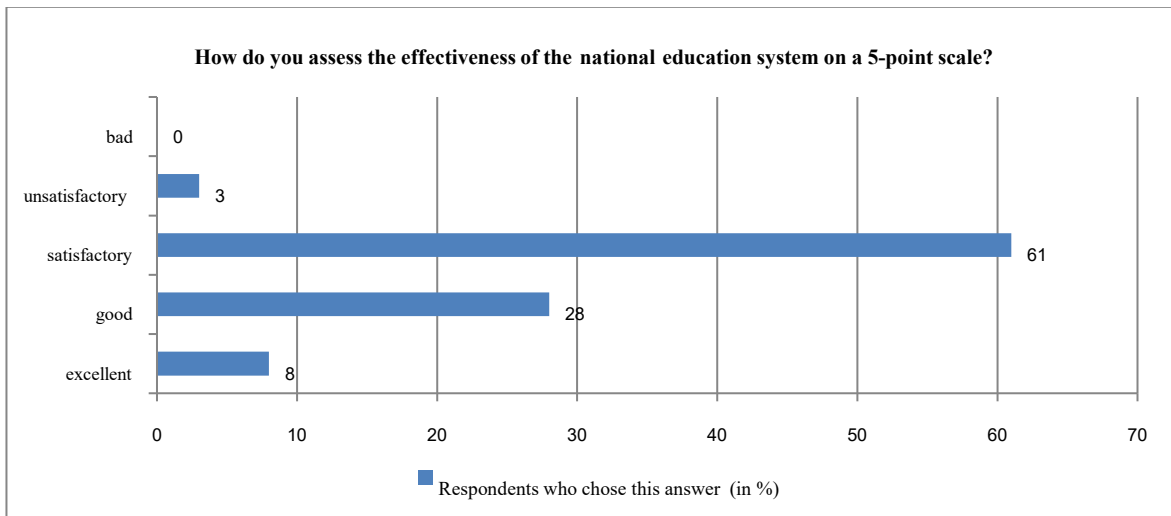


Figure 1. Effectiveness of the national education system on a 5-point scale.

On the question: "The advantages of the modern system of the national education can be attributed," the majority of respondents chose the answer: practice-oriented (65%), followed by high efficiency (22%), such advantages as globalization (7%), selectivity of financing (4%) and others - the basic minimum of necessary skills (2%) received the minimum number of answers (Figure 2).

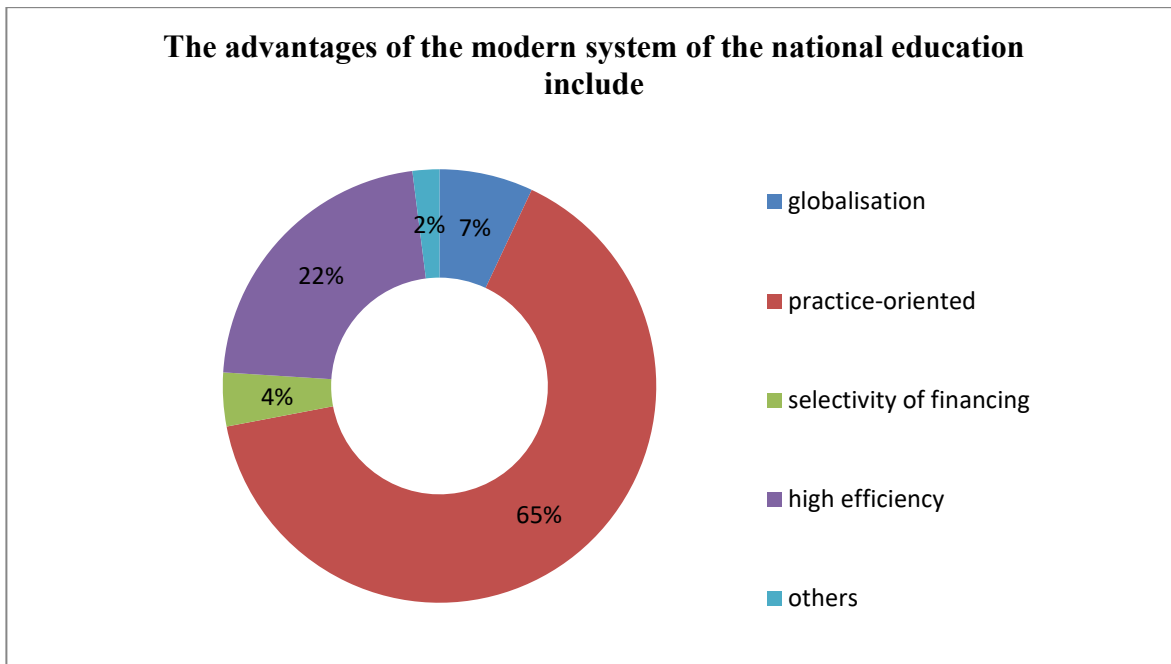


Figure 2. Advantages of the modern system of the national education

To the question, "What are the most serious difficulties experienced by the national education system?" a majority of respondents answered that financial problems were in the first place (44%), followed by educational and methodological problems (25%) and philosophical and moral (educational) (17%) (Figure 3).

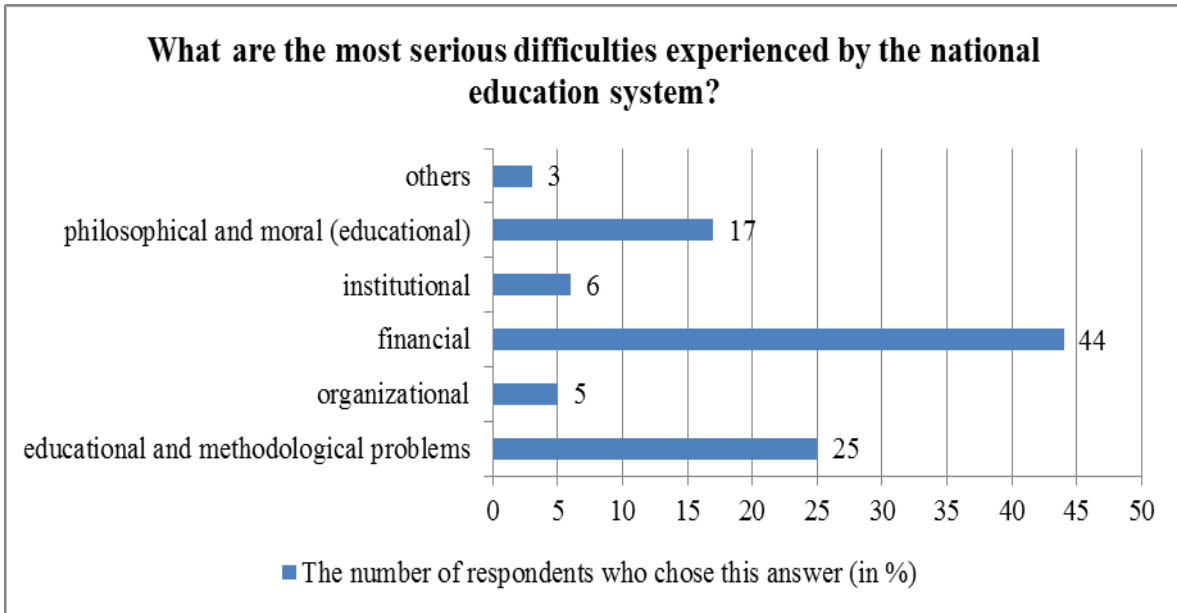


Figure 3. Difficulties of the national education system

To the next question of what elements need to be changed in the national education system, the responses included the financing system (37%), the organization of educational and methodological work (26%), functional and organizational mechanism of the educational system (19%) and regulatory framework (13%). (Figure 4).

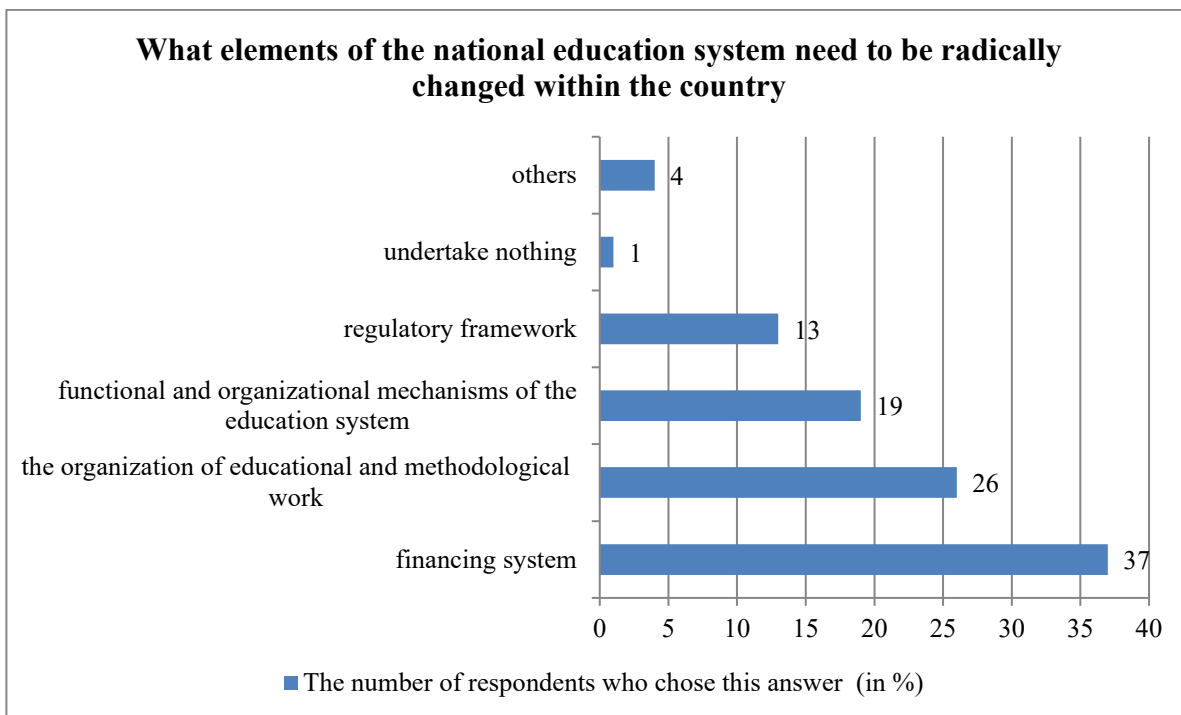


Figure 4. Internal elements of the national education system that are subject to change

Regarding the changes of the elements of the external impact of the national education system, the financing of projects/grants/competitions (40%) comes to the fore, followed by the activities of foreign non-profit-making organizations engaged in educational or grant activities (21%) and the creation of an information field from external educational resources (21%)(Figure 5).

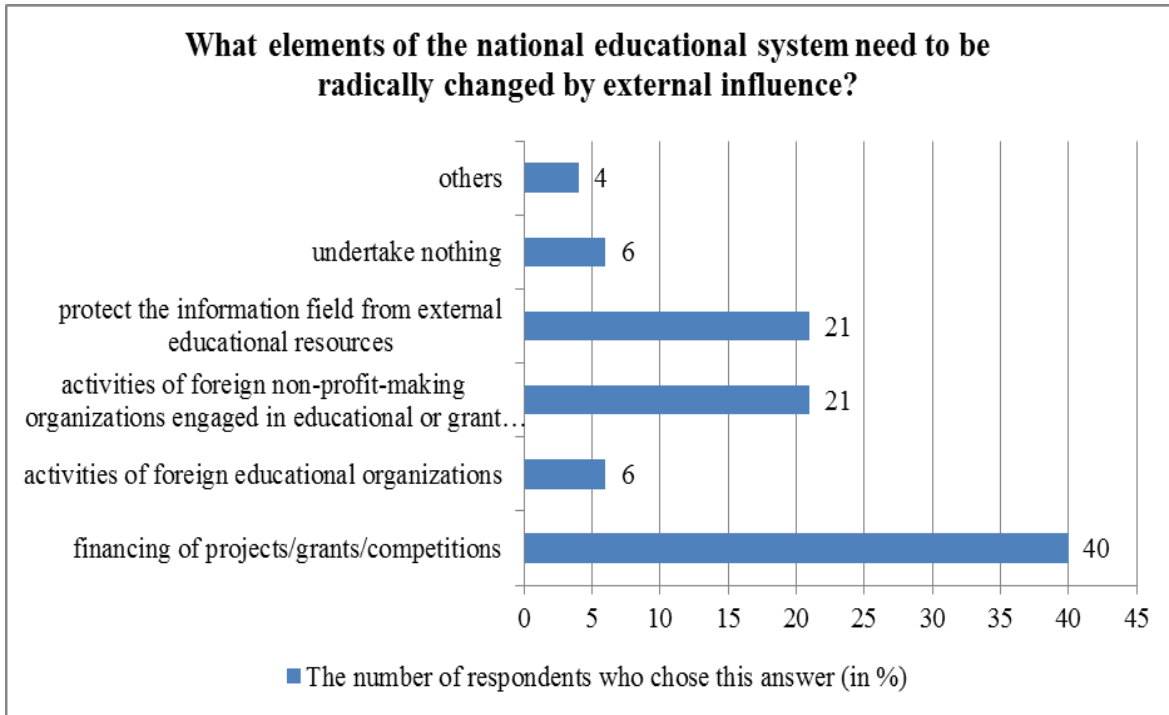


Figure 5. External elements of the national education system that are subject to change

The Russian educational system is rather effective in the face of modern challenges (coronavirus, digitalization, globalization, etc.) - this was noted by more than half of the respondents (55%). However, at the same time, a fifth of the teachers surveyed believe that it is more likely no than yes (Figure 6).

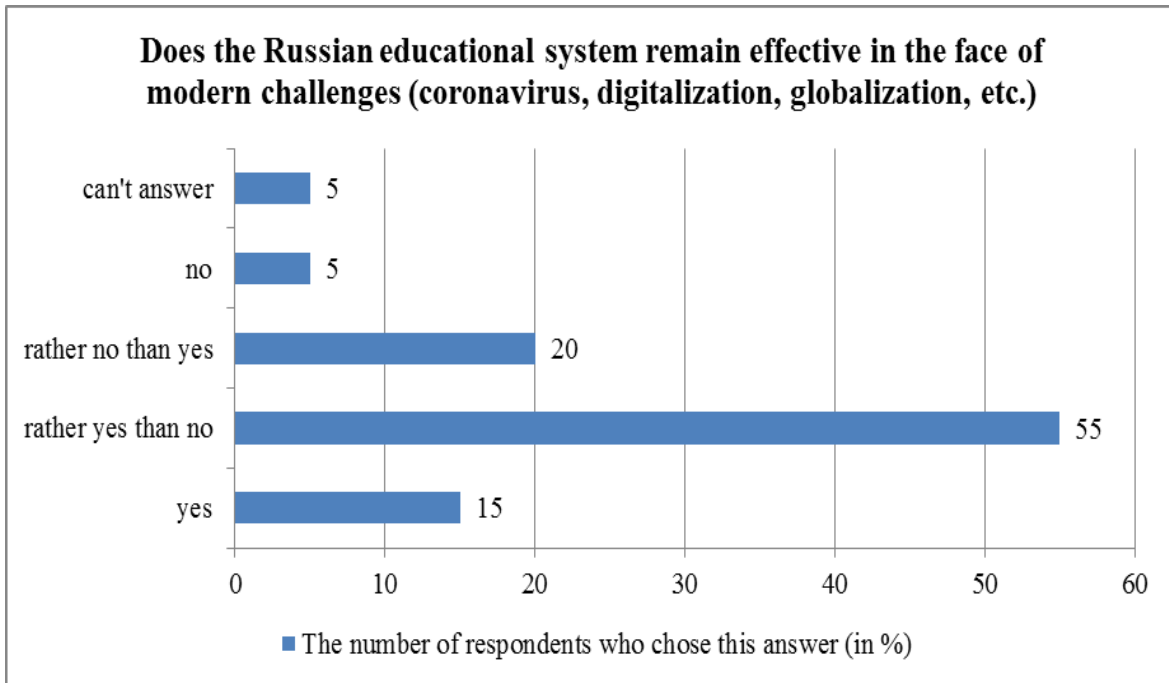


Figure 6. Results of the answer to the question about the effectiveness of the Russian educational system in the context of modern challenges (coronavirus, digitalization, globalization, etc.)

The majority of respondents were not confident in the need for an anti-globalist and protectionist policy in the field of education in Russia (68%), but 21% confidently stated the need for such a policy (Figure 7).

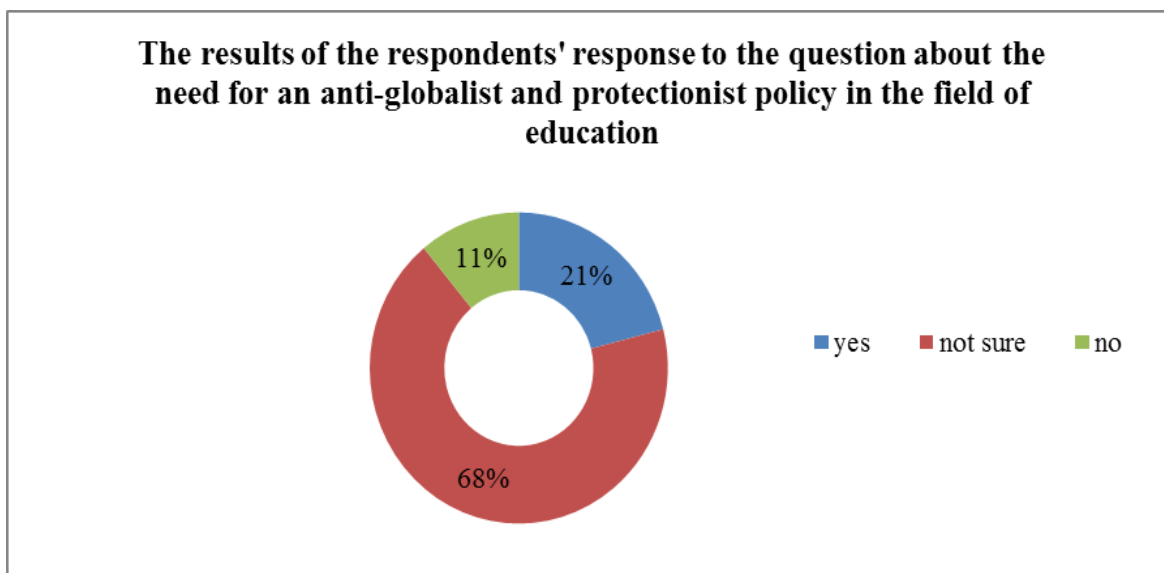


Figure 7. Responses whether to pursue an anti-globalist and protectionist policy in the field of education in the conditions of modern challenges in Russia

To the final question, respondents described with various epithets the changes that have occurred to them in the professional sphere since 2020. The most common were fatigue (25%), joy (25%) and discovery (25%). The remaining characteristics can be divided into three groups: positive changes (activity, change, success, development, responsibility, involvement, interest, energy, inspiration - 10%), negative changes (despondency, apathy, frustration, stress, misunderstanding, uncertainty - 9%) and lack of changes (truth, happiness, acceptance, potential, experience, skill, calmness, satisfaction, self-realization - 5%).

Discussion

A lot of studies are similar to the current research study. For instance, [Liu et al. \(2019\)](#) highlighted the problems of digital transformation in higher education. The authors showed that the introduction of massive open online courses (MOOCs) in 50 universities and institutes in China had led to problems such as insufficient technical support, inadequate preparation of curricula, as well as the lack of national standards for the development of platform standards. The problem of teachers using digital tools is relevant not only in Russia, but also in Sweden. A study conducted by [Amhag et al. \(2019\)](#) analyzed the problems faced by teachers of two different institutions. The results showed that teachers needed extensive pedagogical support in creating digital learning. In addition, they needed to identify pedagogical surplus value in their own context of teaching and learning using digital tools to increase motivation for specific, effective and subject-oriented successful examples presented by experienced teachers.

The transition to the post-industrial era is characterized by the digitalization of all spheres of life. For instance, digital school teachers are characterized in their work [Dyakova and Sechkareva \(2019\)](#). New living conditions require the creation of digital educational organizations, but at the same time, a number of problems arise related to financing, technology, the readiness of students, teachers, and students to study in electronic environments. Another study [Garas \(2017\)](#) notes that ensuring national security, and especially information security, is especially important, since the level of information threats today reaches the scale of information war. It is necessary to preserve information sovereignty in the world in order to maintain the security of the individual, society and state.

Issues of national identity are also considered ([Korobeynikova, 2019](#)), where it is noted that the influence of globalization processes on national identity is rather contradictory. On the one hand, globalization affects the national identity of peoples, eroding it with the spread of cultural standardization and value universalization; on the other hand, it leads to an increase in the national self-awareness of peoples, a clearer understanding of their uniqueness and specialness in the world.

The foreign experience of developing a profile of digital competencies of a teacher was revealed by T.V. Potemkina (Potemkina, 2018). The author considered the problems associated with the identification and description of professional competencies of a teacher reflecting the content of his activities in the digital educational environment through the prism of the developed profile of digital competencies. The profile included six areas or zones of professional responsibility of the teacher: 1) application of digital technologies in the professional pedagogical environment; 2) proficiency in the search, creation and sharing of digital educational resources; 3) the use of digital tools in teaching and learning; 4) possession of digital tools and strategies for evaluating learning outcomes; 5) the use of digital tools to expand the educational opportunities of students; 6) support the development of digital competence of students. Classification of types of digital competencies helps to reveal the content of the teacher's activity in new, changing conditions.

But it is not only the professional competencies of teachers that interest scientists. The personal landscapes of teachers' professional identity in Lesotho were examined in a study (Chere-Masopha, 2018), which raised main issues like: (1) how do teachers view the state of digital technology in their personal lives? (2) how do they accept and integrate digital technology in their classrooms? and (3) how do their perceptions of the state of digital technology in their personal lives affect their (teachers') views on the adoption and integration of digital technology in classrooms in Lesotho? The author used a survey to obtain empirical data. It was concluded that teachers consider the conditions of digital technologies and their use in personal life as limited. They lacked digital knowledge and skills to transfer to the classroom for the adoption and integration of digital technologies.

Conclusion

The study showed that, on the whole, school teachers have a positive assessment of the Russian education system that has developed over the past decades. There was not a single respondent who would point out its ineffectiveness. As the advantages of the system, most of the participants highlighted the practice-orientedness of the system. This is somewhat surprising, since this aspect of the work of educational organizations has become a requirement of the state regulatory bodies of the education system only in recent years. This fact emphasizes that the education system in a short period of time was able to quickly restructure to meet the needs of the economy.

The respondents named insufficient funding, problems of upbringing and educational and methodological difficulties as defining difficulties that do not allow to fully reveal the potential of the educational system. As a result, it is precisely these problems, in the opinion of the participants, that require urgent change.

The research has also shown that the teaching staff of secondary educational organizations determine the main set of problems associated with a powerful external impact on the national educational system. Concurrently with the exogenous impact, the survey participants noted a rather strong impact from a number of internal problems. Nevertheless, the analysis showed that the influence of external and internal factors on national education did not have a cardinal effect on its effectiveness, which is most likely due to the presence of regulators in this system. Despite the fact that the majority of respondents agreed that the educational system was quite stable, they nevertheless came to understand the need to protect it through the implementation of a state protectionist policy. The study would prove to be a good contribution to bringing reforms in the Russian education system. It is recommended that the educational directorate should focus more on teachers' training of digital platforms.

Acknowledgments

The reported study was funded by RFBR, project number 19-29-07037

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