

Article

Adapting or Changing: The COVID-19 Pandemic and Teacher Education in Russia

Roza Valeeva * and Aydar Kalimullin 

Pedagogy Department, Institute of Psychology and Education, Kazan Federal University, 420008 Kazan, Russia; kalimullin@yandex.ru

* Correspondence: valeykin@yandex.ru; Tel.: +7-9061137120

Abstract: Adaptation of the Russian education system to the changes forced by the COVID-19 pandemic was complicated by the sheer size of the country, which entails the differentiation of the regions in terms of the quality of education, access to knowledge networks, communication resources, and top universities. Amid the pandemic, the country's education system experienced an initial shock after the introduction of distance learning in March 2020, attempted to return to classroom learning in September 2020, and introduced blended learning in October 2020. Each stage brought about changes in organization and management of teaching and learning processes, development of online learning platforms and courses, and technological improvements. A diversified teacher education system impeded these changes. In effect, only the largest among 300 education institutions that offer teacher education programs had the necessary resources to provide high-quality distance and blended learning. Their experience could form the basis for creating a standardized model of teacher training for the purposes of blended learning. This is most probable in the context of the tight control and the top-down approach typical of the Russian education system. The article, therefore, analyzes some examples regarding teacher training during the pandemic implemented at Russian universities. These cases have the potential to become major trends that would ensure consistency of the country's education system in extreme situations that might recur in the future.

Keywords: COVID-19; teacher education; Russia; distance learning



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1. Introduction

At the beginning of 2020, along with the rest of the world, Russia faced an unexpected external factor that opened up a qualitatively new stage in the development of the state, society, economy, and education [1]. The pandemic caused by the previously unknown coronavirus COVID-19 spread rapidly within and across countries posing a threat to human lives. The world healthcare industry was unprepared to fight the new virus and, therefore, the only reasonably effective measure to prevent the spread of the disease was social distancing and self-isolation. Under these circumstances, an appropriate response of the country's education system was the unplanned shift to "emergency remote teaching" [2].

The Decree of the Ministry of Science and Higher Education of the Russian Federation (25 March 2020) recommended that all universities in Russia switch to distance learning [3]. As a result, for the first time in its history, the country's higher education system (as well as the education system in general) faced a fundamentally new situation when all educational activities, including education management at all levels, moved to a remote format. This involved the use of distance learning technologies to organize teaching and deliver education. Unlike previous transformations and reforms, this situation can be characterized, firstly, by the total coverage of the entire education system of the country; secondly, by the lack of any special preliminary preparation for such a transition; and, thirdly, by an instantaneous shift to a completely different training format.

Scientific analysis of the consequences of the global transition to distance education still awaits deep study. So far, we can rely on statistical studies of world and Russian

universities, various sociological agencies, public funds, as well as the work of scientists who have been able to analyze the advantages and disadvantages of digital education and its impact on the higher education system before the coronavirus pandemic. The past role of distance and e-learning in Russia was examined in different researches: the place and role of digital technologies in educational activities [4–6]; didactic and methodological foundations used in the design of digital educational resources [7–10]. The research into higher education in Russia examined the development trends of transformation in the digital era [11–14]. Some experience has been accumulated in the development and implementation of digital educational resources, online courses for various levels and fields of study.

The presented studies are largely devoted to describing the merits and positive features of distance and digital learning. Thus, researchers most often refer to the general advantages of distance education: the accessibility and flexibility (as an opportunity to choose the time) of education, the coverage of educational services for those who, for various reasons, cannot be physically present in the classroom, increasing the interactivity of education, etc. At the same time some of them indicated the problems and risks that may arise as a result of the transition to digital learning [5,15,16]. They name the risk of speech degradation, and thinking problems connected with it; the additional study and workload for learners and teachers; the danger of time-consuming development of a digital educational product and its rapid obsolescence, leading to a loss of content quality; the loss of students' basic cognitive competencies, a decrease in their general level of learning, and a departure from the fundamental nature of education.

Previous theoretical and practical experience contributed to a smooth transition of the Russian higher education system to the format of distance learning using distance educational technologies and digital educational resources. Universities have taken measures to prevent the spread of infection and have been able to ensure the continuity of the educational process through an emergency transition to distance learning. However, such a transition had a rather high psychological and pedagogical cost. The problem of the digital inequality of students has become clear, which consists in the fact that it is not so much access to information resources that is important, but rather the ability to use them. Before the pandemic, distance learning was associated with the voluntary choice of this method of teaching by students. During the pandemic, it required certain psychological competencies.

Nonetheless, a number of problems, both practical and theoretical in nature, have emerged in teaching and teacher education. The COVID-19 pandemic has disrupted virtually all national educational systems. However, the degree of its influence turned out to be noticeably differentiated due to the level of socio-economic development of countries, the specifics of educational policy, sanitary and epidemiological measures, and other factors. These aspects have already become the subject of much on the achievements and failures of transforming education in the context of the pandemic [17–26]. Analysis of the various components of this process revealed the peculiarities of educational policy and practice during the pandemic period. Undoubtedly, one of the determining factors of influence was the chronological sequence of a country being drawn into the pandemic funnel, the development of which was indicated by an increase in the number of cases.

The differences, first of all, manifested themselves in the timeliness and seriousness of measures to respond to the growing morbidity, the degree of sanitary and epidemiological protection of teachers and students, the level and timing of isolation, the effectiveness of the introduction of mixed and distance learning formats, the special features of the educational process organization, and social guarantees for various groups of students (poor, international, and disabled). As the pandemic developed, the availability of good-quality medical care, the rate of vaccination, etc., began to play an equally noticeable role.

The Russian Federation, as a country with a fairly high degree of centralization of education, has, in our opinion, a number of advantages in countering the problems caused by the COVID-19 pandemic. Many difficulties were almost absent, typical for the higher education system in a number of countries in Europe, America, and Asia, having a signifi-

cant share of the non-state sector. Thus, Russian universities traditionally received stable state funding and practically did not experience economic problems. Moreover, some of them received additional assistance during the pandemic. An insignificant part of students (20 per cent of the total number in the country) studying at their own expense in state universities received the opportunity to defer payment or receive loyal bank loans for training. For this reason, the Russian higher education system has avoided the problem of social inequality, which is so acutely manifested in a number of countries around the world. State support was provided to disabled students among young students, as well as international students who received preferences in social services (temporary cancellation of fees for living in hostels, organizing free meals, issuing food rations, employment, and organizing public works). At the same time, in some geographically remote areas, especially small universities, difficulties arose with access to the internet and paid educational resources, an insufficient number of digital devices, and the lack of specially equipped places for students to work in hostels [27].

This article aims to provide a critical insight into teacher education in Russia during the COVID-19 pandemic; to identify and highlight educational policy responses to the challenges of pandemic lockdown; to ascertain major trends ensuring consistency of the country's education system in extreme situations; and to present the examples regarding teacher training during the pandemic implemented at Russian universities.

2. Materials and Methods

As part of the study which has informed this article a complex variety of research and analytical methods, complementing each other, was used. This includes analysis and synthesis of the regulatory, legislative, instructional and teaching papers, and materials on management and procedure studies on teacher education during the pandemic in Russia as well as the study and generalization of remote teaching experience. As an illustrative example we discuss the Kazan Federal University case of teacher education during the pandemic and the post-pandemic period. The main data sources are the reviews and subsequent higher education regulations and policy documents in the Russian Federation and research papers on student teachers' training. We give significant attention to large-scale national studies on teachers and teaching. Although teaching is at the core of our paper, we also consider teachers and the challenges they met in the context of COVID-19, in particular the development of their digital knowledge and skills.

3. Results

3.1. Educational Policy Responses to the Challenges of Pandemic Lockdown in Russia

Until the spring of 2020, serious restrictions were not provided by educational policy in Russia. As information spread about the spread of a little-known disease in the first weeks of January 2020, the Federal Service for Surveillance on Consumer Rights Protection and Human Welfare (Rospotrebnadzor) initiated preventive measures to block possible channels for the distribution of infection. First of all, the international educational mobility of Chinese students studying at the universities of the Russian Federation, including pedagogical higher educational institutions, was considered as a threat. The Rospotrebnadzor document "On the Prevention of Coronavirus Infection", published on 23 January 2020 [28], indicated the possibility of importing the disease by Chinese students, taking into account the incubation period and the further development of clinical symptoms in Russia. As a countermeasure, higher education institutions were ordered to provide medical supervision for 14 days for students who arrived from China. In the event of any signs of an infection, the administration of the universities had to provide immediate isolation and hospitalization of these students, as well as urgent information to the territorial bodies of Rospotrebnadzor. For the prevention of a new coronavirus infection, it was recommended to use masks, frequent washing of hands with soap or rubbing them with skin antiseptics, regular airing of the premises, and wet cleaning. On the basis of this document, the Ministry of Science and Higher Education of the Russian Federation sent information to the

administration of higher educational institutions, including those implementing teacher education programs, on the strict observance of the requirements of Rospotrebnadzor [29]. It was followed by the Decree of 29 January 2020 “On Measures to Prevent the Spread of Coronavirus Infection” [30]. This order was supplemented by the resolution of the Chief State Sanitary Doctor of the Russian Federation dated 2 March 2020 No. 5 “On Additional Measures to Reduce the Risks of Importation and Spread of a New Coronavirus Infection (2019-nCoV)” [31], aimed at the timely detection and isolation of persons with signs of a new coronavirus infection. These and a number of other documents marked the first attempts to counter the spread of the pandemic in the country’s educational system.

An analysis of the normative documents issued by the Ministry of Science and Higher Education at this stage shows to a greater extent their preventive nature, which did not imply serious changes in the educational process. The collapse of illusions on the similarity of the disease with traditional strains of influenza, regularly and quickly enough transmitted by humanity, occurred on 11 March 2020, when the World Health Organization (WHO) officially classified the coronavirus (COVID-19) as a pandemic.

The speed and scale of the disease development came as a surprise, not only for Russia but for the whole world. March 2020 became a milestone for the educational system of Russia, making obvious the threats of a developing pandemic, confirmed by an increase in the number of registered cases of human infection around the world. On 1 March 2020, a Russian was first diagnosed with COVID-19; in the following days, the number of cases began to multiply. Despite the fact that, according to the tradition that has survived since the Cold War, all spheres of the country’s life were potentially ready to function in unforeseen situations, no one could have imagined the magnitude of the COVID-19 virus threat. However, the presence of a vertically structured education management system made it possible to quickly respond to the spread of infection.

This was reflected in the decrees of the Ministry of Education and Science of Russia dated 14 March 2020 No. 398 “On the Activities of Organizations Under the Jurisdiction of the Ministry of Science and Higher Education of the Russian Federation in the Context of Preventing the Spread of a New Coronavirus Infection on the Territory of the Russian Federation” [32] and dated 14 March 2020 No. 397 “On the Organization of Educational Activities in Organizations Implementing Higher Education Programs and Corresponding Additional Educational Programs in the Context of Preventing the Developing New Coronavirus Infection on the Territory of the Russian Federation” [33].

Unlike the previous ones, these documents provided already serious changes in the implementation of educational programs:

- the possibility of providing individual vacations for students, including transferring them to training according to an individual curriculum;
- organization of contact work of students and teaching staff exclusively in the electronic information and educational environment; and
- the use of various educational technologies allowing the distance interaction of students and teaching staff.

At the same time, state bodies have established strict sanitary and epidemiological requirements for the activities of educational institutions. In this case, the strict centralization of the country’s educational system played an unprecedented role, since it provided for the total and unquestioning implementation of all instructions of the higher authorities by universities.

The rapid development of a new pandemic, the lack of a clear understanding of the fight against it led to the introduction of isolation measures aimed at limiting communication between people. Taking into account the huge territorial dimensions, the complexity of the administrative–territorial division of the Russian Federation, it was the centralized model of education management that played a positive role in the implementation of the antiquated program. Local authorities and the administration of higher educational institutions were fully responsible for the implementation of regulations and orders of the Ministry of Science and Higher Education, Rospotrebnadzor, etc. Therefore, automatically

all educational institutions fell into the orbit of the orders of the Ministry of Education and Science of Russia dated 25 March 2020 No. 484 “On Measures to Implement the Presidential Decree of the Russian Federation” and dated 25 March 2020 No. 206 “On the Announcement of Non-working Days in the Russian Federation” [3]. According to these, in all educational organizations of the country, initially, for the period from 28 March 2020 to 5 April 2020, non-working days were set for employees and vacations were provided for students. As it later turned out, this was only an interim measure, followed by the decree of the President of the Russian Federation dated 2 April 2020 No. 239 “On Measures to Ensure the Sanitary and Epidemiological Well-being of the Population in the Russian Federation in Connection with the Spread of a New Coronavirus Infection (COVID-19)” [34]. In accordance with it, the Ministry of Science and Higher Education issued the decree of the Ministry of Education and Science of Russia dated 2 April 2020 No. 545 (10) prescribing from 6 April 2020 to temporarily suspend the attendance of all educational institutions by students and ensure compliance with the self-isolation regime for teachers from 4 April 2020 to 30 April 2020 inclusive, including:

- pregnant women, women with children under the age of 14;
- employees over the age of 65; and
- workers with chronic diseases.

Educational institutions were supposed to ensure the transfer to the remote form of the teaching staff’s work. The administration was instructed to organize the implementation of educational programs in full using e-learning and distance learning technologies (various digital resources that provide the ability to fix a digital footprint in order to confirm the fact of conducting and participating in the lesson).

The government’s concern about the expansion of the pandemic forced to extend restrictive measures until the end of the school year in educational organizations of all levels, which returned to normal activities only on 1 September 2021 in connection with the start of the new academic year.

The 2020–2021 academic year started on 1 September at Russian universities in the traditional form, however, due to a noticeable increase in the number of cases in the country, in mid-November 2020, the Ministry of Science and Higher Education again transferred universities and institutes in Moscow and St. Petersburg to distance learning mode. However, universities in other regions were asked to make a similar decision in coordination with the territorial Rospotrebnadzor. Most of them switched to blended learning, providing students with the opportunity to study in the formats most convenient for them.

The final point today is Order No. 63 of 28 January 2021 of the Ministry of Science and Higher Education “On the Organization of the Educational Process in Educational Institutions of Higher Education, Taking into Account the Risks of the Spread of a New Coronavirus Infection” [35]. In accordance with this, the heads of educational institutions of higher education, under the jurisdiction of the Ministry of Science and Higher Education of the Russian Federation, in agreement with the territorial bodies of Rospotrebnadzor, were ordered to organize the implementation of educational programs in full-time education, based on the sanitary and epidemiological situation and the characteristics of the spread of the new coronavirus infection (COVID-19) in the corresponding territory of the constituent entity of the Russian Federation. When implementing educational programs, one should strictly follow sanitary and hygienic precautions.

3.2. Theoretical and Empirical Review of the First Results of the Transition of Russian Education to Distance Learning Formats during the COVID-19 Global Pandemic

The main constraints and challenges that teachers and students in the Russian higher education system faced during the pandemic was reflected in large-scale national studies on teachers and teaching carried out by specialists of the NAFI Research Center in the field of human capital, research by the Institute of Education of the Higher School of Economics, FIRO RANEPa, during a pandemic in Russia [36].

Of particular interest is the School Barometer project initiated by the World Education Leadership Symposium consortium, participants in the World School Leadership Study (WSLS) international project, and implemented by the staff of the School Management Laboratory of the Institute of Education, National Research University Higher School of Economics [37]. The project was launched in March 2020. The first participants were citizens of Germany, Austria, and Switzerland. In April, several more countries joined the project, including Russia. Studies within the framework of this project confirm the data of other observations [38–40].

The Laboratory of Media Communications in Education, Higher School of Economics, surveyed 22,600 teachers from 73 Russian regions on the Russian teachers' problems of transition to distance learning [41,42]. Half of the teachers surveyed said that they had problems connecting to online broadcasts due to the lack of technical devices (for example, there is no web camera, headphones, or computer); more than 75% of teachers faced problems in conducting online lessons due to their students' lack of technical devices (computers, tablets, webcams, etc.); half of the teachers surveyed indicated that their students did not have access to the internet at home, which caused difficulties in organizing distance learning; 43% of teachers had difficulty choosing a platform for teaching children; 84% of teachers believe that their workload has increased with the transition of schools to distance learning; 75% of the interviewed teachers did not conduct video lessons during the distance learning period; 47% and 31% of teachers, respectively, conducted online lessons in cities with a population of over one million and in cities with a population of over 250,000.

The sample of 8288 full-time undergraduate (89.8%) and postgraduate (10.2%) students of Kazan Federal University filled in a questionnaire with close-ended questions on the pressure points of the shift to on-line learning during the pandemic [43]. According to the survey results, 41.21% of students were completely satisfied with the distance learning mode; a considerable proportion of students (43.42%) were rather satisfied with distance education but mention that the platforms and software used for educational purposes had some disadvantages; 15.38% of students were not satisfied with distance learning, arguing that "many classes are canceled, the timetable is not followed, teachers are not always ready for such format, and students do not receive answers to many questions". At the same time, however, according to an overwhelming majority of teachers, remote work presents more challenges and difficulties as it requires a more thorough and detailed design of the education process—from formulating goals to monitoring and evaluating results. According to our data, teachers now spend, on average, twice as much time preparing one lesson as they did in traditional face-to-face teaching. To identify the factors preventing successful distance learning, the students were asked the following question: "What problems and difficulties did you face while adjusting to distance learning at the university?". Among the most common problems the participants named "slow internet connection," "increased workload," "ability to self-organize learning," etc. In general, two groups of problems were distinguished: technical and organizational problems. The first group of problems (technical) often occurred at the initial stage of the transition to a distance learning mode. The second group of problems (organizational and pedagogical) was related to the increase in the workload and self-organization at home. The significant increase in the amount of home assignments on many modules in the context of self-isolation, a confined environment, and a lack of physical activity leads to the deterioration of psychological and physical health of students. This was reported by over 90% of graduate students.

These conclusions about the students' attitudes towards a full-time distance education are consistent with the data obtained by other researchers. The Institute of Education and the Centre for Institutional Research at the Higher School of Economics together with the Tomsk State University conducted a survey of more than 20,000 students from 300 Russian universities. The survey involved two stages. The first stage was conducted at the end of March in the first weeks of distance education. The second stage was conducted in May

when the semester was coming to an end. The research demonstrated that the number of students who were content with distance education was stable, i.e., about 30% [44].

3.3. Russian Teacher Education Meeting Challenges of the COVID-19 Period

All higher educational institutions implementing teacher education programs found themselves in completely new realities requiring radical transformation of the educational process. The fact that there are more than 250 universities implementing teacher training programs in Russia has led to a rather differentiated picture of the transition to distance learning in the country. The success of adaptation to new conditions was largely determined by the availability of technical and information resources, the infrastructure of distance learning, the readiness of teachers and students to work in a digital environment in a particular educational institution. It is clear that at the initial stage, small pedagogical universities and institutes were in the most vulnerable position. On the contrary, the largest teacher training centers in the country, for example, Moscow State Pedagogical University, Russian State Pedagogical University, Kazan Federal University, and a number of others, were able to quickly establish the educational process in a distance format, and then in a mixed format. The pandemic has accelerated the development of its own educational resources in leading Russian universities, as well as the expansion of a number of national digital education platforms [43].

The transition to distance learning in the spring of 2020 necessitated the development of local orders, instructions, and recommendations for organizing the educational process. This function was transferred to the administration of universities which, however, were required to be guided by federal regulations. They regulated the forms of organizing classes and monitoring student progress. Typically, most universities and institutes have used Microsoft Teams, Zoom, and their own digital educational resources to implement distance learning. Significant difficulties were caused by the organization of the monitoring of students' progress. Traditionally, this component of the educational process in Russian educational practice was aimed at checking and assessing the development of competencies in the development of disciplines (modules), practices, including the level of assimilation of theoretical knowledge, the level of mastering practical skills in all types of educational activities, and the ability of students to work independently in the process of studying a specific discipline (practice).

Accordingly, the transition to distance learning made it necessary to change such traditional forms of monitoring as written homework; test papers; colloquia; testing (written or computer); reports, essays, and abstracts; oral questioning; control of practical skills; checking the fulfillment of assignments in practice; and term paper (term project) in the discipline [45,46].

Overall, despite numerous challenges, the COVID-19 pandemic has set the stage for a major breakthrough in teacher education. The well-known thesis "the quality of teacher training determines the quality of school education" has acquired particular importance for teacher education in a pandemic situation. The organization of the educational process in higher educational institutions has developed platforms for the formation of digital competencies for future teachers, thereby simulating a prototype of future activities of a graduate in school.

Now we can only assume how much distance learning of students has influenced the formation of professional competencies of future teachers. For example, if the educational process for the study of theoretical courses was quite stable, then the development of practical courses, and especially in the organization of pedagogical practice, caused great problems. The situation was complicated by the transfer of general education schools to remote work in the spring of 2020 and the lack of contact work of interns with children. That is why clarifications were made to the students' individual tasks for practice, in accordance with the assigned competencies. In the context of the implementation of practice in the format of distance learning, some individual tasks were revised: there were more tasks for studying and analyzing the problems of school education and preparing analytical reviews,

while tasks focused on observing children directly in productive activities decreased. These tasks also included remote work, for example: organizing and conducting a pedagogical council in a remote form and pedagogical analysis of articles on the websites of educational journals. If the traditional task involved contact work with children, the students were asked, for example, to record a video where they described how they would spend the class hour (training session, etc.), and presented such an event. If students needed to collect information about an educational institution, or about the work of a specialist, then they carried out this collection of information using the website of this institution.

It should be noted that the transition to distance learning increased the labor intensity of teaching several times: it was necessary to master new labor functions, process digital content, design classes, and prepare electronic educational resources, individual assignments, and much more.

- Distance learning required individual work with each student teacher. Students who do not have a sufficient level of academic independence, motivation, striving for self-development and personal growth cannot be involved in such an educational process without an “external motivator”. A significant difficulty in organizing practice in a distance format is the lack of participation of a supervisor from the organization—a school or kindergarten psychologist, and centers of psychological and pedagogical support for children and adolescents. As a rule, when selecting practice bases, the department takes into account the level of qualifications and work experience of these specialists—these are professionals of the highest category who can qualitatively manage the practice, transfer their own experience in diagnostics and correction, as well as conduct individual and group consultations.
- Distance learning reduces the quality of competence development by students. This is especially noticeable in the familiarization practice, which is carried out in a distributed manner when, in the usual format, one day a week, students visited educational institutions and centers and had the opportunity to reflect and jointly analyze the work with the head at the department at the university.
- Distance format of practice does not fully ensure contact work with children, and it is also not possible to adopt pedagogical experience from specialists. Since the training of teachers and psychologists requires the mastery of skills in conducting various forms of education and upbringing (for example, a lesson, a class hour, an extracurricular activity, a correctional and developmental lesson, etc.), then no alternative tasks (video recording, analysis of a video recording of a lesson, etc.) can fill this gap.

It can be assumed that the negative impact of the violation of the traditional education system of schoolchildren on the organization of students’ pedagogical practice will most likely cause long-term manifestations of their inadequate preparedness for work at school. This will require the development of special programs to correct the resulting gaps already within the framework of postgraduate training of teachers in refresher courses.

On the other hand, teacher training in the context of the COVID-19 pandemic has highlighted the need for major adjustments in initial teacher training programs. In particular, the introduction of additional courses on digital learning, course development, psychological support for distance learning, psychological and emotional self-regulation of teachers themselves, epidemiological knowledge, etc. Lessons of 2020 should become the basis for further reorganization of the educational process in higher educational institutions, making it obvious that it is impossible to completely return to the traditional offline system. This actualizes such fundamental issues for Russian pedagogical education as the readiness of teachers and students for a mixed learning format, the content of modernized curricula and their administration, new schedule algorithms, internal policies within individual universities, etc.

4. Discussion

Tight centralization and control played a positive role in preventing and overcoming difficulties in teacher training in extreme situations in Russia. But in a predictive context,

we must make a decision—whether we will continue to actively use digital learning to improve the learning of future teachers, and not consider it as a temporary measure, or as a secondary replacement for traditional approaches. For example, if a topic can be learned more effectively in the classroom, why should we translate it into online learning? And vice versa. Online learning cannot be a forced substitute for traditional forms.

The model of the future is a harmonious combination of offline and online learning that improves the results of the educational process [47]. Therefore, the most important modern task of teacher education is to teach student teachers to use online tools correctly in organizing regular education in order to achieve the maximum advancement of children in the study of a particular subject. To do this, it is necessary to prepare students for the use of digital technologies, including built-in or combined with online learning; teach them to determine which lessons are more effective to conduct in the classroom or vice versa remotely, what additional resources should be attracted to each topic studied, etc. The debatableness of these issues can be questioned only in the context of inclusive education, where the expansion of opportunities for distance learning is a huge boon. This is the conclusion of the actual problems of digital didactics, which is now being developed in a number of Russian pedagogical universities and introduced into the process of teacher training.

Coming back to the issue of excessive centralization of the Russian educational system, let us put forward a number of arguments to justify it. Undoubtedly, it is necessary to take into account the territorial, geographic, historical, and cultural specifics of Russia, which traditionally assumed a rigidly structured vertical of management in all spheres of life. In educational practice, this was reflected in a huge number of documents that regulated the organization of all its levels. The consequence of this in national pedagogical concepts has become a lower level of self-study of student teachers in comparison with a number of leading countries, through projects, solving real-life problems and other approaches. In the context of the post-pandemic period, this casts doubt on the possibility of active implementation of virtual technologies, since usually Russian students need direct support in learning and direct contact with a teacher. Perhaps this contradiction will become an incentive for new pedagogical theories that imply a higher proportion of independent learning, initiative, variability, and individual trajectories characteristic of digital education.

5. Conclusions

The COVID-19 pandemic has given rise to a large-scale socio-pedagogical experimental work. This involved remote learning by means of digital educational environment backed by distance learning technologies which was a new factor introduced into the educational process. In this context, the pandemic has turned out to be a kind of litmus paper for identifying pressure points of distance education, which we have systemized by the main components of the educational process.

There is the need for new didactics, i.e., digital didactics which require a range of problems to be solved: the development of intrinsic motivation for learning, the organization and psycho-pedagogical support for students' independent work while combining traditional and distance education formats. It requires the development of students' skills of self-organizing educational and research work in the decline of control over their educational activities by university teachers and design of high-quality content of online courses based on well-grounded criteria and technologies, etc.

Online education provides students with many new opportunities that attract attention and increase their interest in learning. These opportunities are not the same and differ depending on the subject domain and selected learning technology. In the system of formal education of all levels and areas of training, full-time distance learning can be considered as a form that supplements and enhances the socio-pedagogical, organizational, psychological, and managerial potential of the traditional (face-to-face) format of education.

In modern higher education, there is an objective demand for a reasonable combination of forms, methods, and means of the traditional (face-to-face) and virtual, distant interaction between participants of the educational process [48]. Thus, in modern didactics

the combination of interaction forms in real and virtual environments should be considered as a common didactic pattern and a relevant principle of education, aimed at identifying and fulfilling the psycho-pedagogical potential of the information and educational environment and distance learning technologies.

In the post-pandemic world, the role and place of digital educational platforms is likely to increase. However, the effectiveness of their application will be determined by such factors as reliability, usability, information security, and ease of interaction between participants of the educational process.

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