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RESEARCH NOTES

Analysis and development of effective distance learning practices

Análisis y desarrollo de prácticas efectivas de aprendizaje a distancia

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Summary

Distance education at the present stage of development of the world educational practice has acquired a global character. The range of educational services has significantly expanded; the number of educational organizations and institutions involved in this form of education has increased; a huge number of students use the Internet, gadgets and high-tech services. It has influenced the development of the educational environment around the world. Effective distance education practices are those forms of distance learning that allow students and other students to receive "remote" education via the Internet, if necessary. Such a necessity today has become the epidemiological situation in the world with the spread of infection caused by the coronavirus SARS-CoV-2 (2019-nCoV). The publication describes those practices that have proven to be effective. Their advantages and disadvantages are analyzed. The ways of developing such practices are determined taking into account a number of characteristic features of distance education: flexibility, modularity, innovative quality control of education, role repertoire of the teacher, economic benefits, etc. Describes specific principles of distance education, allocated based on the study of domestic and foreign authors, content updated by the authors: the principle of free access; the principle of remoteness; the principle of interactivity, the principle of identification; the principle of adequacy and expediency of using digital technologies in distance education. Methodological recommendations for teachers are given. The purpose of our research is to analyze how effective distance education and its forms are for students and primary school teachers who master additional professional training programs. Examples of questionnaires and survey data on the subject under study are given.

Keywords: digitalization of education, distance education, distance learning, effective practices, characteristics of distance education, principles of distance education, video lectures, the Internet, digital technologies, questionnaires.

Resumen

La educación a distancia en la etapa actual de desarrollo de la práctica educativa mundial ha adquirido un carácter global. La gama de servicios educativos se ha ampliado significativamente; ha aumentado el número de organizaciones e instituciones educativas que participan en esta forma de educación; un gran número de estudiantes utiliza Internet, dispositivos y servicios de alta tecnología. Ha influido en el desarrollo del entorno educativo en todo el mundo. Las prácticas efectivas de educación a distancia son aquellas formas de aprendizaje a distancia que permiten a los estudiantes y otros estudiantes recibir educación "remota" a través de Internet, si es necesario. Tal necesidad hoy se ha convertido en la situación epidemiológica en el mundo con la propagación de la infección provocada por el coronavirus SARS-CoV-2 (2019-nCoV). La publicación describe aquellas prácticas que han demostrado ser efectivas. Se analizan sus ventajas y desventajas. Las formas de desarrollar tales prácticas se determinan teniendo en cuenta una serie de rasgos característicos de la educación a distancia: flexibilidad, modularidad, control innovador de la calidad de la educación, repertorio de roles del docente, beneficios económicos, etc. Describe los principios específicos de la educación a distancia, asignados según sobre el estudio de autores nacionales y extranjeros, contenido actualizado por los autores: el principio de libre acceso; el principio de lejanía; el principio de interactividad, el principio de identificación; el principio de adecuación y conveniencia del uso de tecnologías digitales en la educación a distancia. Se dan recomendaciones metodológicas para los profesores. El propósito de nuestra

investigación es analizar qué tan efectiva es la educación a distancia y sus formas para los estudiantes y profesores de primaria que dominan programas de formación profesional adicionales. Se dan ejemplos de cuestionarios y datos de encuestas sobre el tema en estudio.

Palabras clave: digitalización de la educación, educación a distancia, aprendizaje a distancia, prácticas efectivas, características de la educación a distancia, principios de la educación a distancia, videoconferencias, Internet, tecnologías digitales, cuestionarios.

Introduction

The problem of developing and implementing effective distance learning practices is an important and inescapable fact of modern higher education. It's important to realize that connecting the challenges of distance education with global epidemiological situation is not meaningful. Yet the truth is that the spread of infection caused by the SARS-CoV-2 (2019-nCoV) has not only caused a pandemic, made mankind assimilate several concepts (lockdown, self-isolation, pre-COVID life, etc.), but also led us to force the development of a digital education system.

Analyzing the published first findings on the impact of COVID-19 on students' and teachers' health (primarily mental health) [11], we understand that competent organization of distance education is, if not a cure-all, then a real way out in the given situation. It should be noted that under current conditions the natural processes of distance learning development have significantly accelerated, while the confrontation between traditional and digital educational systems has aggravated.

At the same time, the search for effective ways to improve the quality of higher education has become more intensive.

It is essential to note that it was the second decade of the 21st century that saw various aspects of this issue thoroughly analyzed. The symbiosis of the theory and practice of distance higher education was described the paper by A. Solomchinsky and Ye. Tauskanova (2015) [17].

The sketch of the "dream" of high-quality and results-oriented education, where due attention is paid to the fundamental state documentsб such as the Federal Law on Education in the Russian Federation № 273-FZ (2012); the State Program of the Russian Federation *Development of Education in the Russian Federation up to 2020* (2017); State Program of the Russian Federation *Development of Education* (as amended on December 31, 2020) (in effect since January 8, 2021), defines a major vector of reforming the Russian higher education, which is to achieve high quality education (Zborovsky, G., Ambarova, P. (2019) [7].

The search for effective ways to improve the quality of education is being carried out:

- during the analysis of the state and prospects of higher education development (Romanov 2018) [15];
- in the process of explaining the essence of "technologization of educational process" and highlighting the peculiarities of solving the pedagogical problems arising in this regard (Deryuga 2020) [5];
- in characterizing distance learning as one of the effective means of improving the quality of education for students in higher education [10], and etc.

The experience of different Russian universities in organizing the process of digitalization of the Russian higher school (for example, the experience of universities in the Ural Federal District of the Russian Federation [12]) reveals the relevance of the research, which may be explained by the following contradictory points:

- The social need to involve lecturers in the digital environment and the paradigmatic conservatism of the education system.

- The readiness of lecturers to use digital educational resources and traditional conservatism of the education system.
- The awareness of the influence of distance learning on the quality of education and the personality of the student and the lack of a comprehensive approach to changing the goals, structure and content of the educational process.

The Strategy for the Development of the Digital Society in the Russian Federation for 2017-2030 [18] has become an important document, which not only defined the ways of Russia's digital society development, but also consolidated the necessity of higher education reorganization in this regard.

Following this document and a number of the studies mentioned above, the paper pursues the goal of analyzing effective practices of distance education and developing them taking into account the challenges of our time.

Literature review

Distance learning (hereinafter referred to as DL) is considered today an effective tool for organizing the educational process at the university in modern conditions of digital transformation of society.

"Distance learning... is a form of organizing the educational process that combines traditional and new information technologies and is based on the principle of independent knowledge acquisition. It mainly involves telecommunication principle of delivering the main educational material to the student and interaction between students and teachers both directly in the learning process and when assessing the knowledge and skills acquired in the learning process" [4, p. 142].

I. Kuznetsova seems to be right, when she is arguing that "distance learning should be built with the necessary and sufficient level of learning quality" [9].

This research allows stating that DL is meaningfully and technologically connected with "distance education" (hereinafter referred to as DE). There is still a problem of precise definition of these concepts and their substantive differentiation.

A. Andreyev gives a precise description of the concept of DE. He points out that "distance education is a system in which distance learning process is implemented and an individual achieves and confirms an educational qualification" [1, p. 36].

At the same time, it is important to take into account the results of students' knowledge quality assessment in distance learning both in the system of general education and in the system of higher education [19].

"Distance learning is a synthetic, integral, and humanistic form of learning, based on the use of a wide range of traditional and new information technologies, as well as the equipment, which helps deliver educational material, study independently, enable exchange between teacher and student, while the learning process is generally irrelevant to their location in space and time, as well as to a particular educational institution" [2, p. 16].

Foreign scientists tend to note that it is DL that contributes to overcoming a variety of temporal, spatial, and qualitative limitations in a individual and in-demand higher education. Modern digital technologies, as we know, are those technologies that are based on coding and a variety of ways to transfer information in the shortest possible time. ITs come together to form a unique and fast-acting pattern of interaction. Digital technologies act as a working mechanism for the formation of digital culture and the development of DL innovative model. Both foreign and Russian researchers consider personal development at the present stage as full-fledged, provided there is systematic learning, dynamic transformation of a person's self and his or her life activities with the use of

digital technologies. Such technologies bring significant social, educational, and economic effects (Green & Bavelier, 2003) [22]; (P. Peterson, 2012) [28].
One cannot but agree with a number of researchers who define the digitalization of education as a universal key to the integration of life processes in the social, economic, and cultural spheres. At the same time DL with its organization naturally acts as an acute problem within DE (J.S. Brown, 2005) [21]; (Y.B. Kolikant, 2010) [25]; (M. Miah & A. Omar, 2012) [27].
To remain globally competitive, higher education institutions will have to update, and sometimes even reinvent, effective practices (including DE) in a timely manner. By analyzing authentic learning experiences using digital tools, university educators need to know how students use educational technology and implement the most effective ones in education, learning, and communication. The educator is to be able to adapt the learning experience to meet the needs of students. Lecturers, given the logic of the learning process, arouse and support students' interest, develop their motivation, curiosity and natural desire for activities of learning and discovery (M.O. Thirunarayanan, H. Lezcano, M. McKee, & G. Roque, 2011) [29].
As Russian and foreign studies show, distance education includes various aspects of quality, ranging from organizational issues, technological infrastructure to pedagogical approaches. The process of digitalization of education affects internationalization by offering online and flexible educational programs, enabling administrative solutions, data protection systems, fraud detection systems, plagiarism detection, research data storage, library services and a variety of learning resources, as well as opportunities for improved cooperation between educational institutions. In addition, the digitalization of education also requires appropriate competencies for those involved.

Consequently, DE is a multilevel educational system with the DL being implemented in it.
In addition, DE as an educational system and DL as a purposeful multifactorial process seem to have a significant impact on the development of personality, implying the personalities of both the lecturer and the student.
Our Department of Pedagogy and Educational Technology in 2020 held (October 15-16) a significant All-Russian Scientific Conference "Personal development in the digitalization of education: from primary to higher education" with international participation dedicated to the 45th anniversary of elementary school teachers training at I. A. Bunin Yelets State University. The conference included summing up not only 45 years of elementary school teachers training at the university, but also the quality of work in the direction of personal development in the digitalization of education. As the research analysis shows, the relevant question is whether in the new conditions of separation (distancing) it is still possible to be together or distance education leads to dissociation? These questions are addressed by G. Zborovsky (2018) in his paper [6].
As the outcome of the conference showed, all the processes taking place in society at the present stage (economic, social, cultural, and etc.) are actively changing all spheres of human life, and first of all the sphere of education, as it prepares experts for tomorrow's educational practice. Effective DE practices can become the mechanism that can launch the processes of educational modernization. So, DE today is a necessary given, especially in higher education.
Distance education, as we know, has a number of important characteristic features.
The first one is *flexibility*. Students can listen and watch video lectures on YouTube, be present at consultations and interviews, i.e. work as they like, choosing the time, pace,

rhythm, working space, and etc. There is only one prerequisite, which is the availability of an Internet connection.

The second one is *modularity*. A discipline is usually presented in sections and/or modules. Students master them one by one. This contributes to the systematization of students' knowledge and facilitates the process of monitoring the mastery of the discipline materials by the lecturer.

The third one is *innovative quality control*. Control of compliance of the education level and quality with Federal State Educational Standards. The set of tools for such control includes: recording the presence in the chat during a video lecture; development, implementation and defense of course projects and graduate qualification works; interactive participation in practical classes; performance of creative assignments; teacher-student interaction in the process of independent mastering of course materials by the latter.

The fourth one is *the teacher's role range*. This includes the role of tutor, as the teacher accompanies the student in the process of modular mastering the discipline. The role of the coordinator, as the teacher coordinates the cognitive processes of students. The role of corrector, as the teacher has to timely correct the course of the educational process in the conditions of preschool education, the mastered program, etc. The role of consultant, as the teacher advises those who develop an individual curriculum; advises students and all those interested in the student's successful mastery of the educational route in general and within a particular academic discipline. Finally, the most challenging role is that of supervisor. A teacher supervises course projects and graduate qualification work, students' research activities. He/she supervises the learning process of the whole student academic group, course, and etc.

The fifth one is *economic benefit*. It is achieved by unifying the content of educational material, addressing DL technologies to a large number of students, ergonomic use of office equipment, learning space, and etc.

What follows is the list of the specific principles of distance education identified using the papers by A. Andreyev [1; 2],

Ye. Polat [13], A. Korneyev [8], A. Skvortsov [16], S. Guryev [3], A. Khutorskiy [20] and other scholars, theorists, methodologists, and practitioners:

- The principle of free access. It reflects the most important condition of DE, which is getting education freely, on a common basis. The only thing one needs is an Internet Access Point. The training is barrier-free, which means that everyone without exception can study in the usual conditions of comfort.
- The principle of remoteness. It implies "remote" work of the student, while the interaction with the teacher is minimal, and the level of independence is maximal.
- The principle of interactivity. It allows demonstrating the internal activity of students in their active communication with each other and in interaction with the teacher.
- The principle of identification. It establishes the right to identify a student in order to control the learning process.
- The principle of adequacy and expediency of the IT technologies use. It sets the necessity of using these technologies and is characterized as a leading pedagogical principle. It requires a meaningful qualitative assessment of all stages of the design, organization, analysis and reflection of the functioning of the distance education system.

In addition, the DE technologies that have proven themselves perfectly and therefore have the status of "effective DE practices" include the following:

- development and implementation of the list of literature necessary for mastering the discipline (basic and additional); the list of Internet resources necessary for mastering the

discipline; modern professional databases and information reference systems; educational-methodical sets of literature and assignments;
- distribution of materials by e-mail from lecturer to students, between students, from student to lecturer, and etc.;
- organizing and conducting on-line discussions using computer networks (conferencing on cloud platforms Zoom, Jitsi in open-source video conferencing application, educational online platform Uchi.ru, etc.), smartphones (e.g. free WhatsApp application, etc.);
- development and implementation of a variety of materials, including in electronic form that include computer educational environment (e.g. EIOS PARUS-VUZ, etc.), computer database, and electronic textbooks;
- videoconferencing via TV broadcasts with telephone feedback (similar to live TV broadcasts with the possibility for viewers to call a hotline and ask their questions); bidirectional videoconferencing via computer networks; bidirectional videoconferencing via satellite teleconferences

Video lecture is an effective DL and DE practice.

According to researchers and educationalists (Ye. Avdeyeva, N. Latsko, O. Pikhota, Ye. Saito, 2019), video lecture is "a type of lecture (educational event) that is designed to convey thematic content to students to form knowledge or ideas and using video material for this purpose, as a rule, transmitted to the screen, computer monitors or an interactive board. The most effective use of video lectures in distance learning is when the lecturer's speech is transmitted via satellite and/or terrestrial Internet channels or over the air by an ordinary television signal" [14, p. 24].

Video lectures that are usually presented to all same-year students (several areas of training, several profiles with a certain similarity of the curriculum) were delivered on YouTube. These lectures were on Pedagogy discipline that has the same number of lecture classes and is necessary for students in the 44.03.05 Pedagogical Education training programs that embrace different learning profiles (Early Childhood Education, Additional Education, Elementary Education, Social Pedagogy, Physical Education, Life Safety, Chemical and Biological Education and Geography) and 44.03.02 Psychological and Pedagogical Education training programs (Psychological and Pedagogical Support of Diversity of Childhood and others).

We believe that such a video lecture is an effective practice within the virtual educational environment of the university. It helped demonstrate the accompanying multimedia presentation along with the lecture. It helped organize the control of attendance through recording the students' presence in the chat and active communication (question-answer, etc.). We tried to make the video lecture material clear, understandable, and easy to comprehend. Relying on the methodological recommendations for developing a video lecture (Ye. Avdeyeva, N. Latsko, O. Pikhota, Ye. Saito, 2019) [14], we supplemented and refined them, considering our experience in developing and implementing this effective DE practice.

Conclusions were formulated by the trainees based on the results of the studied (listened and watched) video lectures independently. At the last stage, they compared their conclusions with the scientific and theoretical conclusions of scientists, theorists, methodologists, and practitioners compiled by the teacher leading the discipline. Video lecture is certainly an effective DE practice. It stimulates the students' thinking activity and motivates them to search and discover independently within the framework of the discipline studied

In addition, a video lecture contributes in a certain way to the development and social activity of students. It helps organically connect students' academic and extracurricular

activities. Having received information at the lecture, the student uses it in the socially significant activity. So a number of foreign researchers (for example, McInnis) develop the idea of the necessity to combine educational and socially significant activities in the educational process of a university. The researcher analyzes the developments in the field of higher education and notes the fact that it is the experience gained in the educational process that helps students to be active not only in studies, but also in social life [24].
Xerri, Radford & Shacklock list and analyze the options for involving students in learning activities. In their opinion, this is facilitated by active interaction of students with each other and the teacher during studies (lectures, including video; practical classes) in extracurricular work (in various activities, including social activities, consultations, etc.) and everywhere where both students and teachers cooperate effectively [28].
The analysis of video lectures (delivered in September-December, 2020) using the poll among students and in reliance on standard requirements to video lectures has shown their full conformity. As an effective practice of distance education, they corresponded to all didactic requirements to the content, structure and organization of this type of lecture, as well as the methodology of presentation of educational material on the discipline and ergonomics of perception of audiovisual material.

Methodology

The methodological basis of the research was the modern psychological and philosophical provisions of the theory of personality and its development.
The research was carried out using theoretical and empirical research methods. Theoretical methods included theoretical and methodological analysis, method of pedagogical interpretation, comparison, generalization, concretization. Empirical methods included questionnaires, tests, and surveys.
The questionnaire *Self-assessment of professional activity of a future teacher* (K. Levitan, 2013) served to measure the level of effectiveness of distance learning of students.
The study was conducted on the basis of I.A. Bunin YSU during 2019-2020 academic years. The total number of subjects was 125 1st and 2nd year students receiving education in the following areas: 44.03.05 Pedagogical Education (Early Childhood Education, Additional Education, Elementary Education, Social Pedagogy, Physical Education, Life Safety, Chemical and Biological Education and Geography) and 44.03.02 Psychological and Pedagogical Education (Psychological and Pedagogical Support of Diversity of Childhood and others).

Results

In the process of implementing the practices of distance education, which we consider as effective in the education of students in these areas of training, we measured the level of their effectiveness, conducted questionnaires and surveys of students and elementary school teachers.
In the course of questioning students we offered them a number of tasks and questions.
1. Define your attitude to the practice of distance education in the development of the main professional educational program in the field of Pedagogical education.
2. Did you have problems with the availability of the necessary equipment for distance learning?
3. Do you think the teaching load has increased?
4. Choose (no more than two options) positive aspects of distance learning:
- DL provides a range of options for using a variety of sources of learning information;
- DL provides the formation and development of informational and communicative competence of students in working with information objects;

- DL provides the possibility of using different information tools for active communication with the teacher and other students (e-mail, Skype, WhatsApp, Viber; video, audio, voice messages, and etc.).

5. What are the disadvantages of using distance education technologies (hereinafter DET)?

The questionnaire was a combined one. Its first four elements (task and questions) implied an independent answer of the respondents, while one question (#4) contained a sample of answers.

We processed the results of the questionnaire and presented them for clarity in the form of figures.

The performance of task #1 showed that the respondents' opinion was divided:

- 37 students (30%) gave a positive assessment of DE practice and adopted their positive attitude toward this form of DE.
- 88 students (70%) expressed the need to receive education in full-time format (real-time, real presence in the classroom), which showed their negative attitude to the practice of distance education in the development of the basic professional educational program in the field of Pedagogical education. The distribution of the respondents' opinions is highlighted by color; a footnote on the percentage and is shown in Figure 1.

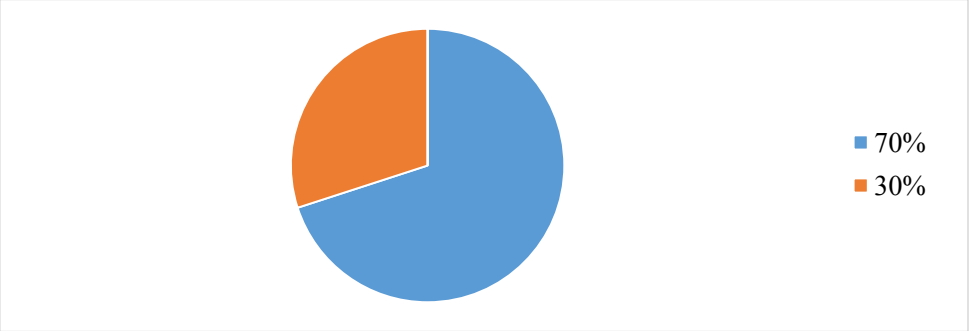

Fig. 1. Analysis of respondents' answers to task #1 in the questionnaire

When answering the second question of the questionnaire, the problem associated with the availability of necessary equipment for distance learning, expressed 60 respondents (48%), 65 respondents (52%) did not have any problems (see Figure 2).

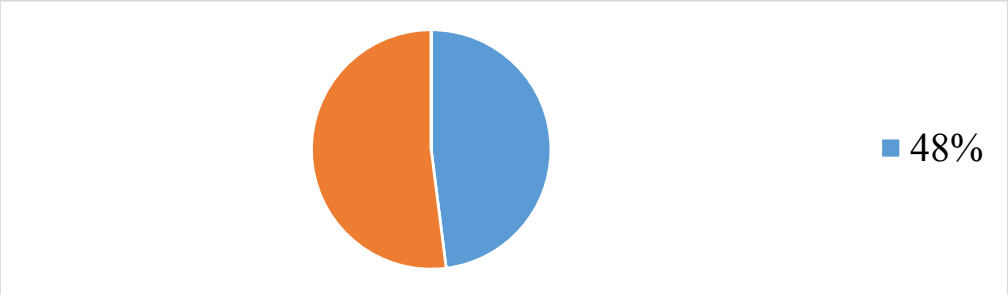

Fig. 2. Analysis of respondents' answers to the second question of the questionnaire

The answers to the third question indicate an increased study load. Eighty respondents (64%) wrote about this in the questionnaire (see Figure 3).

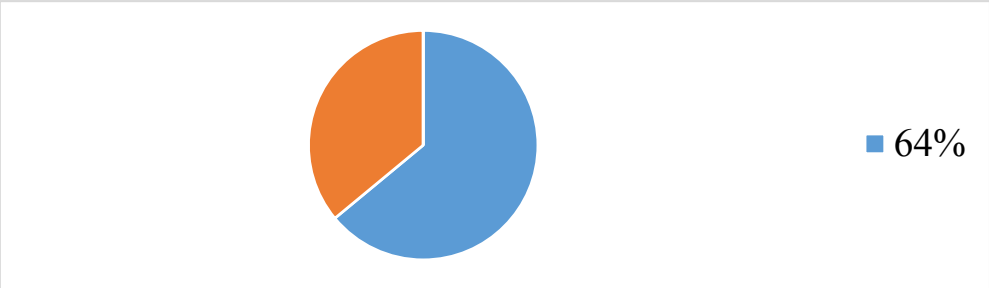

Fig. 3. Analysis of respondents' answers to the third question of the questionnaire

In answering the fourth question, the following results were obtained:
- Providing a variety of options for using a variety of sources of educational information: 107 respondents (86%).
- Ensuring the formation and development of informational and communicative competence in students to work with information objects in the process of distance learning: 125 respondents (100%);
- Providing opportunities to use different information tools for active communication with the teacher, other students: e-mail, Skype, WhatsApp, Viber; video, audio, voice messages, etc. in the process of distance learning: 65 respondents (52%).
The answer to the fifth question showed that the negative aspects of the use of the DOT include:
- lack of necessary equipment (48%);
- the increased workload of students and teachers (64%);
- lack of "live" communication between the participants of the educational process (100%);
- frequent communication failures (50%);
- violations of network etiquette (30%).
Diagnostic procedures allowed visualizing the success of distance learning (in %, n=120).
The average score for the quality group is determined by the quotient of the sum of scores by their number.

$$X_{CP} = \frac{X_i * n}{N}$$

with n being the number of answers,
Xi being the scores,
N being the number of respondents.

Table 1.
Expression of indicators before and after the experimental testing

Indicators	before the experimental testing %	after the experimental testing %
Gnostical skills	43%	67%
Readiness for self-education	54%	71%
Readiness for pedagogical reflection	32%	64%
Readiness for self-development	47%	61%
Readiness for research activities	34%	76%
Personality orientation	34%	56%

The compositional assessment expressed in standard scores helped determine the following levels: 5 - high; 4 - above average; 3 - average; 2 - low; 1 - unacceptable.

Table 2.
Levels of readiness of a future teacher to professional activity

Level	before the experimental testing	before the experimental testing
unacceptable	13,9%	4,2%
low	32,%	9,9%
sufficient	36,3%	54,2%
appropriate	17,8%	31,7%

The analysis of the presented results allows drawing the following conclusions:
- of all components of readiness the most formed are the readiness for self-education 71% and the readiness for research activity 76%;
- the readiness for pedagogical reflection (from 32% to 64%) and personality orientation (from 34% to 56%) show the most significant dynamics of formation;
- the inadmissible level dropped from 13.9% to 4.2%.
- 54.2% and 31.7% of the students reached the sufficient and the appropriate levels respectively.

The questionnaire survey during the study showed the following results:
Is it convenient for you to study remotely?
Yes, it's convenient (I like it): 37%.
Yes, but it’s difficult: 36%.
No, it’s very difficult: 23%.
No, it’s too easy: 4%.
Your level of motivation to learn in the distance form
Increased: 34%.
Remained the same: 57%.
Decreased: 9%.
Are you satisfied with the distance learning process??
Yes: 21%.
More likely yes than no: 37%.
More likely no than yes: 31%.

No: 11%.
The results of the survey showed that students mainly choose full-time education. Nevertheless, distance education, according to the respondents, contributes to the formation and development of informational and communicative competence, expands the range of opportunities in terms of using different information tools for active communication with the teacher, other students: e-mail, Skype, WhatsApp, Viber; video, audio, voice messages, and etc.
Interrelation and interdependence of full-time and distance learning, joint research, educational and methodological work stimulate cognitive initiative, self-development, self-education, self-education, and desire for personal growth.
An example of effective practice of distance learning at I.A. Bunin YSU is the implementation of additional professional programs of professional development and retraining. So from March to December 2020 the Department of Pedagogy and Educational Technology upgraded the qualifications of teachers of primary classes under the programs "Active learning technologies and methods of education of primary school students in the implementation of the Federal State Educational Standard" and "Development and improvement of the educational process in elementary school under the implementation of the Federal State Educational Standard", as well as teachers of supplementary education under the program "Innovative practice of additional education and relevant teaching technology." During this period, more than 50 teachers have upgraded their qualifications.
Training was held in video-conference mode using Zoom and Jitsi. Course attendees and teachers actively used the interactive whiteboard to demonstrate practical assignments and chat for comments and messages.
Listeners of the courses on the professional development program "Development and improvement of the educational process in elementary school in the conditions of the realization of the Federal State Educational Standard" (November 2020) were offered a similar questionnaire to the one we offered to students of 44.03.05 Pedagogical education. Nineteen elementary school teachers working in the educational organizations of Yelets and Lipetsk were among the trainees.

Questionnaire results

The answers to the first question show the unanimous opinion of the respondents. All course attendees (100%) were in favor of the need for full-time education in this area of training. The comments clarified that it is possible to prepare a competent teacher only in conditions of full-time form.
The answers to the second question related to the availability of necessary equipment for distance learning show that teachers are provided with the necessary equipment to conduct training sessions. Comments to the answer clarified that most teachers had personal equipment, and some of them worked on school equipment. In addition, the comments emphasized that students did not always have such equipment, or there was one set in the family, and there were two students, for example. This caused some difficulties.
The answers to the third question indicate an increased workload on both teachers and students. All respondents wrote about this in the questionnaire. In the comments to the answer, it was noted that at the beginning of distance learning the schedule of lessons was not always maintained. Homework required detailed explanations for both students and parents. According to the majority of respondents, the school day was practically unregulated. First-grade teachers experienced a certain difficulty in their work.
The answers to the third question indicate an increased teaching load, both for teachers and students. All respondents mentioned this in the questionnaire. In the comments, it

was noted that at the beginning of distance learning lessons were not always kept. Homework required detailed explanations for both students and parents. According to the majority of respondents, the school day was practically unregulated. Some difficulty in the work was experienced by first-grade teachers.

The answers to the fourth question yielded the following results:

- DL provides the ability to access many sources of educational information: 15 respondents (79%).
- 19 respondents (100%) mentioned the formation (among students) and development (among teachers) of informational and communicative competences in working with information objects in the process of distance learning.
- 14 respondents (73%) mentioned the expanding the range of opportunities to use various information tools for active communication with the teacher and other students (e-mail, Skype, WhatsApp, Viber; video-, audio-, voice messages, and etc.) in the process of distance learning.

The answers to the fifth question showed that the negative aspects of the use of DOT by the students include:

- increased workload on learners and teachers (100%);
- frequent failures in connection with / extremely low level of readiness of the whole Internet system to work with the sharply increased load (53%)
- lack of teachers' organization of quality control over students' independent performance of academic assignments (100%);
- psychological discomfort (79%);
- lack of "live" communication between the participants of the educational process (100%);
- violations of network etiquette (64%).

So, the result of the survey indicates that the trainees of professional development courses are convinced of the need for teacher training in a face-to-face format. In the same way, professional development courses (in their opinion) are preferable to "take place" in the face-to-face form.

However, distance learning, according to the respondents:

- provides formation (for students) and development (for teachers) of informational and communicative competences;
- helps to adapt more quickly to various tools of interaction with colleagues, students, parents, namely e-mail, Skype, WhatsApp; creation of video, audio messages.

The results of the survey showed that the students of the courses prefer, mainly, full-time form of education, noting the need to integrate distance and full-time forms of education. Nevertheless, distance education, according to the respondents, contributes to the formation and development of their informational and communicative competences, the use of various means of interaction with teachers, students (e-mail, Skype, WhatsApp; creation of video, audio-messages). In addition, foreign researchers E. Instefjord and E. Munthe [24] seem to be right arguing that both DL and DE technologies contribute to the education and development of teachers' digital competence.

In the course of the study we saw that professional development programs which are mastered by elementary school teachers act as a necessary "bridge" leading "from digital literacy of a teacher to his/her digital competence" [23].

The expansion of effective practices of distance education took place at the expense of the Department of Pedagogy and Educational Technology competitions of various levels. For example, the Regional Intellectual and Cognitive Competition "Young Connoisseurs of Native Land" was held remotely (21.09.2020 - 25.11.2020). Among the participants of

the Contest there were more than 90 third and fourth graders of educational organizations of Lipetsk region.
Younger students competed in four genres (an essay, a photographic work, a poem of their own composition, a research project) and three nominations.
According to the organizers and participants of the contest and their mentors, the distant form of the contest had no negative impact on the quality of the submitted work and the quality of the organization and running of the contest.
Thus, the need for widespread introduction of distance learning in connection with the created conditions not only indicated the difficulties of implementing this educational model, but also allowed to master the previously unused e-learning tools, distance learning technologies, and thus see an opportunity rather than a problem in this transformation.

Discussion

The analysis of the results of the study shows that the availability of effective practices of distance education, the development of constructive technologies and DE and DL, the success of distance learning directly depend on the competent and quality organization of the educational process (including the university).
Most respondents reported that in the process of online learning their individual experience has expanded as a result of the exchange of information and ideas, as well as through publications and answers to problematic questions.
Some learners felt that the technologically mediated nature of distance learning creates misunderstanding, as the theoretical material received requires more time to comprehend the problem than face-to-face in classrooms, and despite the possibility of computer technology, when the action can take place at any time, the teacher's answers to students' online questions were perceived by them as not arriving quickly or immediately at their will.
The lack of dialogue on the problem and the inability to get immediate help from the instructor were also perceived by students as serious drawbacks.
Students mentioned the lack of personal connection with classmates, their reactions to their presentations, and direct contact with the instructor as disadvantages of online learning.
Other disadvantages included: the knowledge gained was only theoretically based; lack of interactivity with learning materials, self-motivation and socialization; plagiarism, academic dishonesty and different level of technological abilities of students.
When developing effective distance learning practices, the need for constant access to a computer and the Internet should be considered, but the lack of electricity or a persistent Internet signal may deprive learners of the opportunity to become a participant in such practices. Alternative options for the educational model should then be available.
In addition, any, even the most effective practices of distance education require self-motivation on the part of learners, the development of their internal incentives: ambition, responsibility, "overcoming oneself," self-control, etc. An additional task arises: both the teacher and the learner have to master the technology of developing such incentives, which in itself is not easy.
Finally, both the teacher and the learner must be ready to use modern technology and have information and communication competence.

Conclusion

The results of our study indicate that digitalization affects all spheres of life in modern society, with a wide range of multimedia, interactive, communicative and technical

capabilities. Creative use of a set of information and technical, educational and methodological tools in the educational process allows influencing the methodological culture, core competencies and abilities of future teachers, as well as ensuring the effectiveness of professional and personal development of the teacher.
The effectiveness of distance education is greatly influenced by the teaching staff, a positive climate, and a welcoming atmosphere of joint solution of the tasks set.
Analysis of the obtained data allows arguing that the improvement of future teacher training for professional activity takes place in a system that is a combination of distance education and face-to-face training, necessary for the synthesis of knowledge about themselves and their profession, the development of self-motivation to master professional competencies and functions with regard to their own characteristics. Distance education as a system has a large number of benefits and is a meaningful alternative to traditional education.

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