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EFFECTIVENESS OF DISTANCE LEARNING DURING COVID-19 PANDEMIC FROM EDUCATIONAL PROCESS PARTICIPANTS' VIEWPOINT

Abstract. The educational system of Ukraine, like those of most countries in the world, was not ready for the long-term changes caused by the COVID-19 pandemic. The survey of participants of the educational process revealed that 25% of secondary school students did not start the educational process at all for various reasons, which indicates the need to rethink and restructure the educational process based on new organizational and methodological approaches. The article presents the results of a study of the data of the survey "Challenges of distance learning" conducted by the Institute of Gifted Child of the National Academy of Pedagogical Sciences of Ukraine from 25.05.2020 to 10.08.2020 on determining the opinion of participants of the educational process in conditions of the COVID-19 pandemic. The purpose of the study was to determine the features of distance learning and identify the disadvantages and advantages of distance education for individual participants (parents, students, educators). The research used statistical methods: summarizing and grouping data and visualization methods for their presentation, the method of testing hypotheses using the chi-square criterion, as well as analysis of variance. Respondents evaluated the effectiveness of forms and means of distance learning for different age groups of secondary school students, in particular, the importance for the educational institution of a unified learning platform, resources, partnership, individual choice of forms and methods of distance learning by the teacher, reasonable workload, weekly planning. Educators evaluate the existing measures to improve the effectiveness of distance learning higher than students and parents. In general, parents' assessment of the effectiveness of remote forms and means is the lowest. The study identified gender characteristics of views on the quality of distance learning. In addition, the survey participants, based on their experience, outlined a vision for the future of the educational system.

Keywords: distance learning; challenge COVID-19 pandemic; distance learning tools.

1. INTRODUCTION

The problem statement. Educational system of Ukraine, like those of most countries in the world, has accepted the challenge of distance learning during quarantine. The participants of the educational process gained the first, rather ambiguous and difficult, experience, which outlined both the range of key problems and the directions of overcoming them. In order to determine public opinion on the problems of effective implementation of distance learning in Ukrainian educational institutions during the quarantine period, the Institute of Gifted Child of the National Academy of Pedagogical Sciences of Ukraine conducted a survey "Challenges of distance learning" from 25.05.2020 to 10.08.2020. The initial analysis of the obtained data was published in the article [1]. However, their further elaboration using the methods of mathematical statistics revealed certain details that, in our opinion, will be useful for a wide range of stakeholders, especially in the future comparative context.

Analysis of recent studies and publications. Currently, there is an active rethinking of learning as an important social practice, the role and value of the teacher, as a key figure in the educational process; these issues are actively discussed in educational forums in Ukraine and worldwide [2-5]. UNESCO conducts global monitoring of national and localized school closure data [6], the number of students affected by school closures caused by COVID-19, and provides support to mitigate this problem, offers a selection of curricula, platforms and resources, thematic seminars, partnership, etc., which aims to help parents, teachers, schools and school administrators to facilitate students learning and provide social assistance and interaction during school closures [7, 8]. For example, the authors [9] present the essence, important role, and features of iterations of international mentoring to support the pedagogical activities of geographically remote teachers.

Since the beginning of the pandemic, there has been an impressively rapid transformation of the educational sphere in the context of digital reality in Ukraine as well [10].

The experience of introducing distance and blended forms of learning "in turbojets" has shown that one of the critical factors for the introduction of distance learning is the need to improve distance learning skills [11], produce the necessary teaching materials for teachers and students, and supporting the educational process. The experience gained during training in conditions of forced self-isolation has become a catalyst for research in the so-called digital synthetic learning environments, which not only create new opportunities, but also require coordination and interaction between humans and technical means [12]. It requires the development of flexible learning strategies [13] and learning approaches that consider students' feedback and assessment. Research also indicates that the lack of direct communication of all participants in the educational process disrupts the all-inclusive development of students, negatively affects students who are not able to easily cope with change and are not ready to work independently with educational material [8]. UNICEF research shows that school closures have caused significant cognitive impairment in children, loss of interest in learning, and significantly increased their anxiety [14].

Also significant are the functional difficulties of students around the world in terms of self-isolation and distance learning; the main difficulties are concern about the state of health of the family, the significant volume, and complexity of educational tasks [15, 16]. One of the important challenges in distance learning is also the problem of violation of academic integrity [17].

A survey of countries with existing UNICEF programs found that 93% of governments included distance education in their national COVID-19 emergency response measures. The most common methods of distance learning are television (78%) and online educational platforms supported by the state (74%), as well as their combination [14].

The article's goal. The main purpose of the questionnaire was to identify the features of distance learning, disadvantages and advantages of distance education for individual

participants of the educational process, which will outline effective directions for further improvement of the educational process during distance learning.

2. RESEARCH METHODS

The survey was conducted using Blank Quiz, a link to which was posted on the websites of the National Academy of Pedagogical Sciences of Ukraine and the Institute of Gifted Child of the NAPS of Ukraine [18], educational portal «Island of Knowledge» [19], and was distributed through social networks and e-mail.

The research used statistical methods. In particular, the construction of distributions by age, status, category of participants in the educational process, was carried out by the method of data collection and grouping. Visualization methods were used to represent them. The constructed distribution series was characterized by methods of descriptive statistics. We applied hypothesis testing to determine whether there is a relationship between the assessment of the effectiveness of distance learning (in primary, secondary, senior, high school) and the categories of participants in the educational process, as well as their choice depending on gender using the chi-square test.

To confirm the statistical significance of considerations on differences in the assessment of the effectiveness of distance learning by different categories of participants in the learning process, an analysis of variance was used.

3. THE RESULTS AND DISCUSSION

The total number of respondents who took part in the survey is 431 people (women – 394, men – 37). In our study, we identified three categories of participants in the educational process. Employees of educational institutions (332 people) and researchers (16 people) were grouped into the category of "Educators" – a total of 348 respondents; 49 respondents (applicants for education) were included in the category of "Students", and 36 respondents were included in the category of "Parents" (Fig. 1). Therefore, the slight increase in the number of respondents (433) is explained by the fact that 2 respondents identified themselves simultaneously in two categories: parents and educators. According to the majority of respondents, approximately 75% of the students joined distance learning.

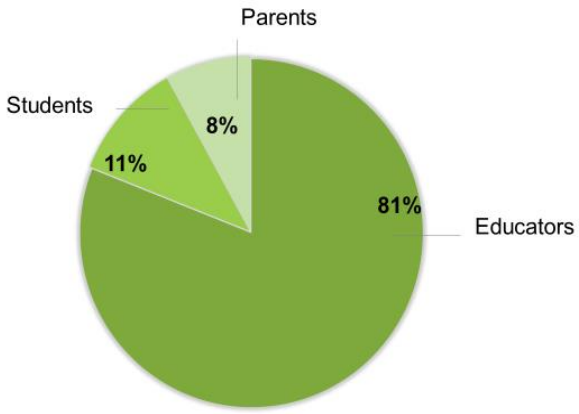

Fig. 1. Distribution of participants of the educational process

As we mentioned in [1], the age of the respondents was from 7 to 81 years, and the vast majority of the respondents (66%) were in the age category from 36 to 65 years. However, it

should be noted that due to the category of 35-66 years, the average age of respondents is almost 42 years; modal age - 48 years, median - 43 years. That is, half of our respondents were under the age of 43, and 25% of the respondents were not older than 30 years. The box plot of the distribution of the survey participants (Fig. 2) shows that the average 50% of the respondents were aged 30 to 55 years.

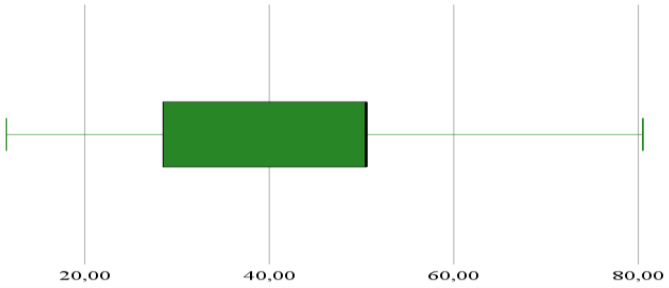

Fig. 2. Box plot of distribution of survey participants by age category

Respondents were asked to determine the effectiveness of distance learning for students of different levels (primary, secondary, senior school and higher school, as well as advanced training and education). For this purpose, a 5-point scale was used, where "5" points are the most effective form of the educational process for students of the appropriate educational level, one of the answer options was also "difficult to say". It turned out that according to the respondents, the effectiveness of distance learning increases almost in proportion to the level of education (Fig. 3). Thus, respondents believe that distance learning is the most effective for advanced training and self-education (36.9% of the respondents rated it at "5") and the least effective for teaching younger students (3% rated at "5" and 25.1% at "1").

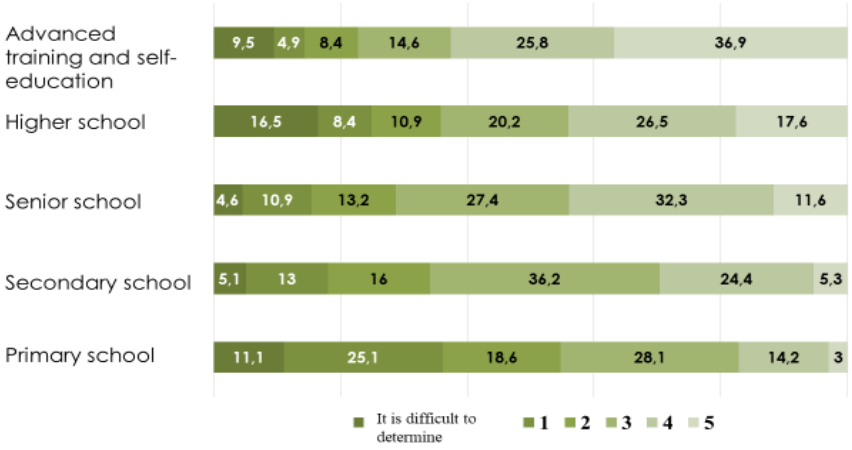

Fig. 3. Evaluating the effectiveness of distance learning for students of different levels

We have considered in more detail the evaluation of the effectiveness of distance learning (Fig. 3) in the context of different target groups. The data obtained from the answers of each category of participants of the educational process were systematized and statistically analysed.

The following hypotheses were tested to determine the relationship between the evaluation of the effectiveness of distance learning and the category of the participant in the educational process.

H0: Evaluation of the effectiveness of distance learning in primary school does not depend on the category of the participant of the educational process.

H1: Evaluation of the effectiveness of distance learning in primary school depends on the category of the participant of the educational process.

Thus, table 1 shows the distribution of answers on the effectiveness of distance learning in primary school.

As a result of applying the criterion χ^2, its calculated value χ^2=17.47 was obtained. At the level of significance of 0.05, the corresponding criterion statistics is $\chi^2_{(0,05;10)}$ =18.31, which gives us the right to accept the null hypothesis.

Table 1

Relationship between assessing the effectiveness of distance learning in primary school and the category of the participant of the educational process

Assessment	Parents	Educators	Students	Total
1	15	88	6	109
2	4	66	10	80
3	8	102	13	123
4	5	49	8	62
5	2	7	4	13
Hard to say	2	36	8	46
Total	36	348	49	433

Thus, we can say with a the probability of 95% that there is no influence of the category of the participant of the educational process on the assessment of the effectiveness of distance learning in primary school. On average, all participants of the educational process evaluate the effectiveness of distance learning in primary school at around 2.2 points. Distributions of the respondents' judgments about the effectiveness of distance learning in secondary school were somewhat different (Table 2).

Table 2

Relationship between assessing the effectiveness of distance learning in secondary school and the category of the **participant in the educational process**

Assessment	Parents	Educators	Students	Total
1	11	40	5	56
2	7	57	6	70
3	11	131	15	157
4	4	85	16	105
5	1	18	4	23
Total	34	331	46	411

Testing the hypothesis of no relationship between the assessment of the effectiveness of the educational process in secondary school and the category of the participant of the educational process with the probability of 95% suggests that there is an influence of the category of the participant of the educational process on the assessment of the effectiveness of distance learning in secondary school χ^2= 16.5 > $\chi^2_{(0.05;8)}$= 15.5. In addition, the category of the participant in the educational process explains 18% of the variation in assessments of the effectiveness of distance learning in secondary school. The same with the probability of 95% (even 99%) can be said that parents on average estimate distance learning in secondary school at 2.3, educators at 2.9, students at 3.2 points. (Estimated value of Fisher's *F*-test is 6.6, *p-value* = 0.001).

The results obtained for the assessment of distance learning in senior school were also different (Table 3).

Table 3

Relationship between assessing the effectiveness of distance learning in senior school and the category of the participant of the educational process

Assessment	Parents	Educators	Students	Total
1	10	32	5	47
2	6	45	7	58
3	10	93	16	119
4	5	118	17	140
5	2	45	3	50
Total	33	333	48	414

The application of Pearson's criterion χ^2 = 19,3> $\chi^2_{(0,05;8)}$ = 15,5 with the probability of 95% allows us to say that the assessment of the effectiveness of distance learning in senior school depends on the category of the participant in the educational process. The lowest assessment is given by parents – an average of 2.5 points, the highest by educators – an average of 3.3 points. Students rate the effectiveness of distance learning in senior school at an average of 3.1 points on a 5-point scale. It was also found that the category of the participant in the educational process explains 19% of the variation in assessments of the effectiveness of distance learning in senior school. (The calculated value of Fisher's *F*-test is 7.67, *p-value*=0.001).

We also explored the possibility of a relationship between the evaluation of the effectiveness of distance learning in higher school and the category of the participant in the educational process (Table 4).

Table 4

Relationship between evaluating the effectiveness of distance learning in higher education and the category of the participant of the educational process

Assessment	Parents	Educators	Students	Total
1	8	24	4	36
2	7	31	9	47
3	6	68	14	88
4	9	99	9	117
5	4	69	3	76
Hard to say	2	57	10	69
Total	36	348	49	433

At the level of significance of 0.05, considering Pearson's criterion, according to which χ^2= 27.6> $\chi^2_{(0.05;10)}$= 18.3, we can say that the assessment of the effectiveness of distance learning in higher education depends on the category of the participant in the educational process.

Using analysis of variance, it is shown that the category of the participant in the educational process explains 21% of the variation in assessments of the effectiveness of distance learning in higher education. The average evaluation of the effectiveness of distance learning in higher education from the point of view of parents is 2.8 points, from the point of view of students is 3 points, and educators give 3.5 points. (The estimated value of Fisher's *F*-test is 8.6, *p-value* = 0.000).

In advanced training and self-education, the highest assessment of the effectiveness of distance learning was given by educators (4.02 points out of 5; parents – 3.44 and students – 3.25). This can be explained by the fact that teachers were the first to accept the challenges of distance education, which significantly helped them to improve their skills.

We also investigated the relationship between the effectiveness of distance learning at different levels of education and the sex of the participant in the educational process (Table 5).

Table 5

The relationship between the effectiveness of distance learning and the sex of the participant in the educational process

	Chi-square calculated χ^2	Critical (tabular value) $\chi^2_{(0.05;df)}$	Df	Acceptance / rejection of the null hypothesis
Primary school	21,0	11,1		reject
Secondary school	15,0	11,1		reject
Senior school	1,1	9,5		retain
Higher school	6,5	11,1		retain
Advanced training and self-education	24,7	11,1		reject

The application of the criterion χ^2 with the probability of 95% makes it possible to say that in primary, secondary school and in retraining or self-education, women and men differently assess the effectiveness of distance learning. Thus, for primary and secondary school, women rate the effectiveness of distance learning lower. Assessments of distance learning at different levels of education, indicated by women / men, were as follows: for primary school – 2.4 / 2.8, secondary school – 2.9 / 3.4, senior school – 3.2 / 3.3, higher school 3.4 / 3.3, qualification upgrading and self-education 3.9 / 3.5). The assessment of the effectiveness of education in senior school and higher school does not depend on the sex of the participant in the educational process.

Analysis of the survey results showed that participants in the educational process note the following most effective learning tools («4» / «5», respectively):

– use of mobile applications in the educational process (39.7% / 25.5%);

– use of web services for conducting online classes with support of video communication with the teacher (33.4% and 32.7%);

– educational platforms for online learning, according to respondents, are the most effective (31.3% / 40%).

To identify the existence of differences in assessments of the effectiveness of different means of distance learning and the category of the participants in the educational process, we tested the following hypotheses.

H0: Evaluation of the effectiveness of distance learning tools does not depend on the category of the participant in the educational process.

H1: Evaluating the effectiveness of distance learning tools depends on the category of the participant in the educational process.

The results of calculations of the application of the criterion χ^2 are shown in table 6.

Table 6

The relationship between the effectiveness of distance learning tools and the category of the participant in the educational process

Distance learning tools	Calculated value χ^2	Critical (tabular value) $\chi^2_{(0.05;8)}$	Acceptance / rejection of the null hypothesis
Email	11,6	15,5	retain
Mobile applications	8,9	15,5	retain
Web services for online classes (Zoom, Google Meet, etc.)	7,3	15,5	retain
Open online course platforms (Coursera, Ed-Era, Prometheus, Khan Academy, iLearn, etc.)	13,6	15,5	retain
Educational platforms for online learning (Moodle, Google Classroom, "Lesson", etc.)	20,8	15,5	reject
Web services for creating interactive tasks (Padlet, Kahoot !, Learning Apps, Class time etc.	37,0	15,5	reject
TV lessons (All-Ukrainian school online)	14,9	15,5	retain

The application of the criterion χ^2 with the probability of 95% makes it possible to say that the assessment of the effectiveness of distance learning tools such as e-mail, web services for online classes, open online courses and TV lessons does not depend on the category of the participant in the educational process. Instead, statistically significant differences were found in the evaluation of the effectiveness of the use of educational platforms for the organization of e-learning and web services for creating interactive tasks. In particular, the use of educational platforms for online learning, parents, on average, is rated at 3.3 points, students – at 3.6 and educators – at 4 points. The use of web services to create interactive tasks was rated by students on average by 2.7 points, parents by 2.9 and educators rated the effectiveness of the use of this resource on average by 3.6 points.

At this stage, we also tested the existence of differences in assessments of the effectiveness of distance learning, depending on the sex of the participant in the educational process. The application of the criterion χ^2 with the probability of 95% indicates that the assessment of the effectiveness of the use of distance learning does not depend on the sex of the participant in the educational process.

We also studied the opinion of the participants in the educational process on other organizational factors that would be effective in distance learning [1]. The respondents were asked to rank the following factors according to the degree of importance of the impact: considering the «reasonable» workload for students and staff of educational institutions; planning classes considering online communication and providing material for self-study; providing opportunities for differentiated learning; individual choice of teaching aids by each teacher separately.

Further detailed study of the effectiveness of organizational approaches in planning distance education in terms of categories of participants in the educational process showed that the choice of a single learning platform by the staff of the educational institution plays the

most important role (first place) in the opinion of 43% of educators, 41.7% of parents and 40.8% of students. On the other hand, among the organizational approaches that will promote the most effective distance learning, 41.3% of educators and 32.7% of students mentioned in the first place the possibility of an individual choice of distance learning by teachers; but this opinion is not shared by parents (only 16.7 % of the first answers) (Fig. 4).

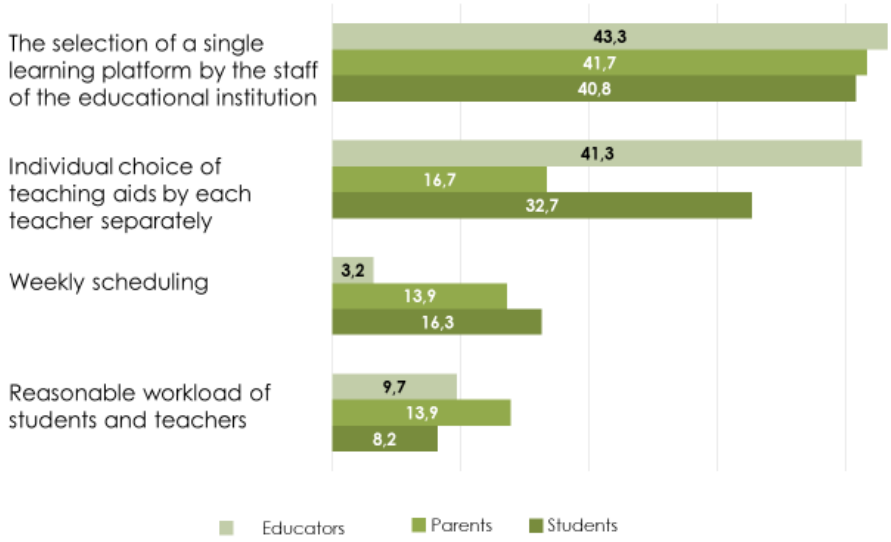

Fig. 4. The effectiveness of organizational approaches in the planning of distance education by the category of the participants in the educational process (1st place)

The distribution of categories of the participants to determine the second most important organizational event that will contribute to the effectiveness of distance learning is shown in Fig. 5. As can be seen from the diagram, educators and parents prefer a reasonable workload, while students seem to be more interested in the possibility of weekly scheduling.

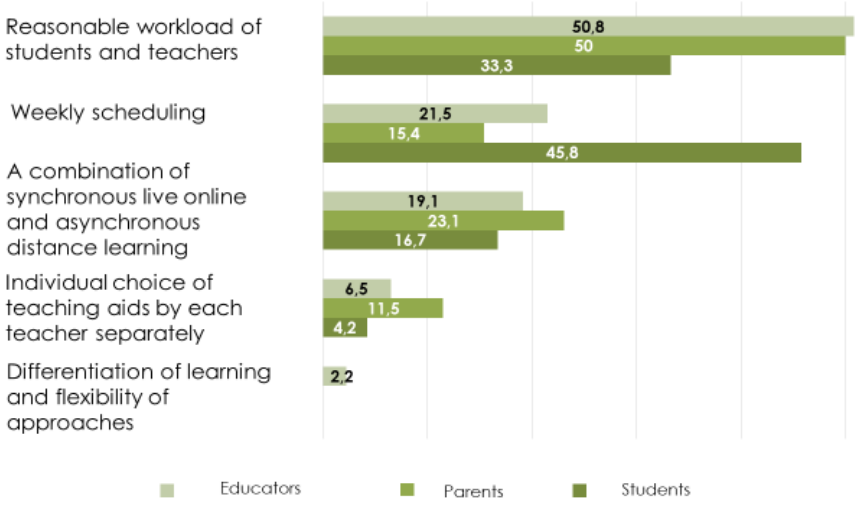

Fig. 5. The effectiveness of organizational approaches in the planning of distance education by category of the participants in the educational process (2nd place)

As can be seen from Fig. 6, in the third most important place among the important organizational factors, the participants note the differentiation of learning and flexibility of approaches, as well as the combination of live (synchronous) and distance learning.

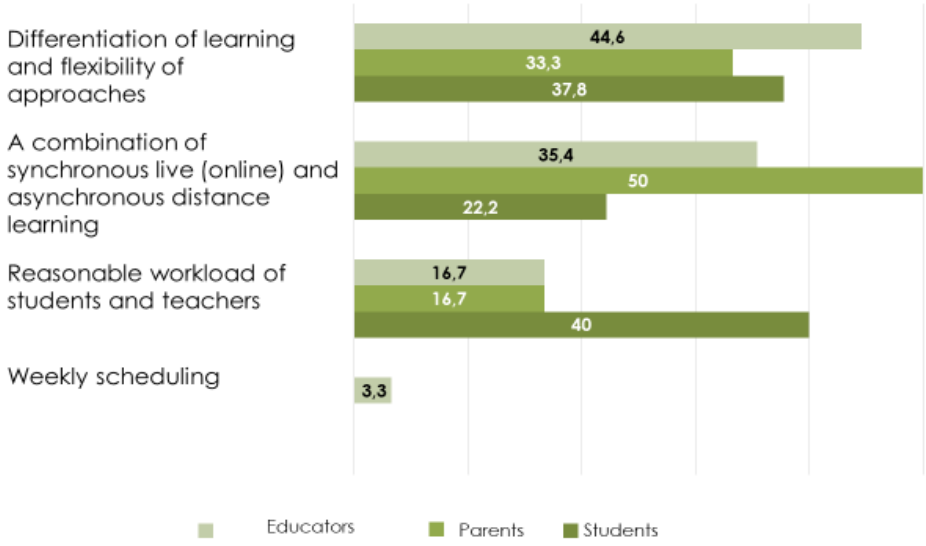

Fig. 6. The effectiveness of organizational approaches in the planning of distance education by category of participants in the educational process (3rd place)

Regarding future integration processes in education, most respondents predict the beginning of a new type of integrated individual education system (44%), partial enrichment of formal education with elements of distance education (39%), enrichment of formal education with elements of non-formal education at a distance (17%).

Today, active integration processes between formal and non-formal education in Ukraine contribute to the formation of a new framework in the Ukrainian education system. Most respondents praised the pedagogical activities of non-formal education for the development of students' cognitive interests and intellectual abilities in terms of distance learning. Among them are distance events of the Junior Academy of Sciences of Ukraine – 35.7% [20], STEM projects online – 52% [21], distance intelligent competitions – 44%, online tournament "Kolosok" [22] in the mobile application – 41% and others.

In addition, we explored the idea of barriers that significantly affect the effectiveness of distance learning. Respondents were asked to rate the significance of the proposed factors on a five-point scale («5» - the maximum significance). Thus, one of the most important obstacles to the effective implementation of distance learning, according to the respondents, is the low provision of resources and teaching aids for all participants in the educational process, in particular, lack of quality tools and sustainable Internet communication («5» points for 67.3% of respondents). Respondents also noted the low readiness of participants in the educational process to use distance learning technologies («5» points for 60.5% of respondents). The participants of the survey consider closer cooperation between educators and specialists in the development of educational technologies and means of education (46.6% rated this factor as «5»). A significant proportion of the respondents (45%) consider it necessary to create online community working groups to develop distance learning materials.

We also investigated the existence of differences in the assessment of measures that can increase the effectiveness of distance learning, listed in [1], different categories of participants in the educational process. We tested hypotheses about the existence of such a connection. The results of calculations of the application of the criterion χ^2 are shown in table 7.

Table 7

Assessment of the relationship between measures to improve the effectiveness of distance learning and the category of participants in the educational process

Measures to increase the effectiveness of distance learning	Calculated value χ^2	Critical (tabular) value $\chi^2_{(0.05;8)}$	Acceptance / rejection of the null hypothesis
Creation of a single All-Ukrainian platform for distance learning	19,8	15,5	reject
Scientific and methodological support of distance learning	29,2	15,5	reject
State regulatory support for distance education	24,1	15,5	reject
Providing teachers with resources, means of distance learning	13,2	15,5	retain
Training teachers to use distance education technologies	5,2	15,5	retain
Partnership between educators and technology development specialists	22,3	15,5	reject
Creating working groups / online teacher communities to develop distance learning materials	14,9	15,5	retain

The application of the criterion χ^2 with the probability of 95% makes it possible to say that the evaluation of the effectiveness of measures to improve the effectiveness of distance learning such as providing teachers with resources, distance learning, training teachers to use distance education technologies, creating working groups / online teacher communities for the development of educational materials distance education does not differ depending on the category of the participant in the educational process.

Instead, there were statistically significant differences in the assessment of the creation of a single All-Ukrainian platform for distance learning, scientific and methodological support for distance learning, state regulatory support for distance education, partnerships between educators and technology development specialists.

The average estimates of measures to improve the effectiveness of distance learning by participants in the educational process by category, the calculated values of the F-criterion and the corresponding *p-value*, indicating statistically significant differences in assessments of measures to improve the effectiveness of distance learning are shown in table 8.

Table 8

Average assessment of measures to improve the effectiveness of distance learning by participants in the educational process by category

Measures to increase the effectiveness of distance learning	Parents	Educators	Students	F	*p-valu*e
Creation of a single All-Ukrainian platform for distance learning	3,5	4,0	3,7	7,78	0,001
Scientific and methodological support of distance learning	3,5	4,1	3,6	7,6	0,001
State regulatory support for distance education	3,3	3,9	3,5	6,68	0,001
Partnership between educators and the technology development specialists	3,7	4,2	3,7	9,7	0,001

According to the results of calculations, we see that educators, on average, evaluate measures to improve the effectiveness of distance learning higher than students and parents. It is worth noting that parents' assessments, on average, are the lowest.

In addition, to identify differences in the assessment of measures that can increase the effectiveness of distance learning depending on the sex of the participant in the educational process, the relevant hypotheses were tested. The application of the criterion χ^2 with a probability of 95% makes it possible to say that the assessment of the effectiveness of measures to improve the effectiveness of distance learning does not depend on the sex of the participant in the educational process.

4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

Our study of the questioning of participants of the educational process was carried out «against the background» of the first experience of distance learning in terms of Covid-19. A deeper statistical analysis of the data described by us in [1] made it possible to draw integrated conclusions.

It is confirmed that all participants of the educational process note the low efficiency of distance learning in primary school. According to educators, the effectiveness of distance learning is greatest for higher and postgraduate education (advanced training). Students note that the most effective distance education is in senior school. Parents rated the quality of distance learning at all levels of education the lowest.

Statistically proven significant differences between men's and women's assessments of the effectiveness of distance learning in primary and secondary education can be explained by the patriarchal nature of Ukrainian society. In the vast majority of cases the function of nurturing and educating children in families is entrusted to women, and it is they who went into the details of distance learning for children of primary and secondary school age.

Women's higher assessments of the effectiveness of distance learning in advanced training and self-education can be explained by their “perseverance” and “greater self-organization”.

The study showed that educators rated the use of educational platforms for the organization of online learning higher than students. At the same time, students rated the use of web services to create interactive tasks much lower than teachers (2.7 / 3.6). This result can be explained by several reasons, in particular, difficulties in meeting deadlines, low level of self-organization, on the one hand, as well as the complexity of the content of the tasks themselves, such as tests, on the other.

An important result of the study is that the participants of the educational process need a single platform for learning and the possibility of individual choice of distance learning by the teacher. However, the latter is not shared by parents: different teaching aids in the study of certain disciplines complicate the work of both students and parents. Respondents also point to the important role of reasonable workload, definiteness of the schedule, which should be recorded weekly, as well as a combination of synchronous and asynchronous learning.

This allows participants in the educational process to plan their activities in advance, somewhat reduces stress and a certain overload of students with online lessons. Distance learning in COVID –19 pandemic has demonstrated, on the one hand, a low level of provision of resources and teaching aids for all participants of the educational process as well as insufficient mastery of distance learning technologies, and on the other, the need for closer cooperation between educators and developers of educational technologies, creation of working groups, online communities for the development of educational materials for distance education.

Calculations also showed that educators, on average, evaluate efficiency of distance learning higher than students and parents. It is worth noting that parents' assessments in the context of the survey are, on average, the lowest.

An important conclusion of the study is the awareness of the majority of participants in the educational process about the beginning of the formation of a new type of integrated and individualized educational system. Ukrainian educators, as well as educators from other countries, are gradually overcoming the challenges of distance education and are actively gaining new experience. The processes of integration between formal and non-formal education that are currently taking place in the Ukrainian education system and the development of new distance learning skills are actively contributing to the formation of a new education system, namely "Education Post COVID – 19".

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ЕФЕКТИВНІСТЬ ДИСТАНЦІЙНОГО НАВЧАННЯ ПІД ЧАС ПАНДЕМІЇ COVID-19 З ТОЧКИ ЗОРУ УЧАСНИКІВ ОСВІТНЬОГО ПРОЦЕСУ

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Анотація. Освітня система України, як і більшості країн світу, не була готова до довгострокових змін, спричинених пандемією COVID-19. Опитування учасників освітнього процесу виявило, що 25% здобувачів освіти взагалі не розпочали навчальний процес з різних причин, що свідчить про необхідність переосмислення та реструктуризації навчального процесу на основі нових організаційно-методичних підходів. У статті

представлені результати дослідження, проведеного на основі опитування «Виклики дистанційного навчання», проведеного Інститутом обдарованої дитини Національної академії педагогічних наук України з 25.05.2020 по 10.08.2020 щодо визначення думки учасників освітнього процесу стосовно його організації в умовах пандемії COVID-19. Метою дослідження було визначити особливості дистанційного навчання, виявити його недоліки та переваги для окремих учасників (батьків, учнів, учителів). У дослідженні використано методи статистики: зведення та групування даних та методи візуалізації для їх представлення, метод перевірки гіпотез за допомогою критерію хі-квадрат, а також дисперсійний аналіз. Респонденти оцінювали ефективність форм та засобів дистанційного навчання для різних вікових груп учнів. Зокрема важливість для навчального закладу єдиної навчальної платформи, ресурсного забезпечення, партнерства, індивідуального вибору викладачем форм і методів дистанційного навчання, розумного навантаження всіх учасників освітнього процесу, його щотижневого планування. Педагоги оцінюють існуючі заходи щодо підвищення ефективності дистанційного навчання вище, ніж учні та батьки. Загалом оцінка батьків ефективності віддалених форм та засобів навчання є найнижчою. Дослідження виявило гендерні відмінності в поглядах на якість дистанційного навчання. Крім того, учасники опитування на основі накопиченого досвіду окреслили бачення майбутнього освітньої системи.

Ключові слова: дистанційне навчання; виклики COVID-19, засоби дистанційного навчання.

ЭФФЕКТИВНОСТЬ ДИСТАНЦИОННОГО ОБУЧЕНИЯ ВО ВРЕМЯ ПАНДЕМИИ COVID-19 С ТОЧКИ ЗРЕНИЯ УЧАСТНИКОВ ОБРАЗОВАТЕЛЬНОГО ПРОЦЕССА

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Аннотация. Образовательная система Украины, как и большинства стран мира, не была готова к долгосрочным изменениям, вызванным пандемией COVID-19. Опрос участников образовательного процесса показал, что 25% школьников вообще не начали учебный процесс по разным причинам, что свидетельствует о необходимости переосмысления и реструктуризации учебного процесса на основе новых организационно-методических подходов. В статье представлены результаты исследования данных опроса «Вызовы

дистанционного обучения», проведенного Институтом одаренного ребенка Национальной Академии педагогических наук Украины с 25.05.2020 по 10.08.2020 по изучению мнения участников образовательного процесса в условиях пандемии COVID-19. Целью исследования было определить особенности дистанционного обучения, выявить недостатки и преимущества дистанционного обучения для отдельных участников (родителей, учеников, учителей). В исследовании использовались статистические методы: обобщение и группировка данных и методы визуализации для их представления, метод проверки гипотез по критерию хи-квадрат, а также дисперсионный анализ. Респонденты оценивали эффективность форм и средств дистанционного обучения для разных возрастных групп учащихся. В частности, значимость для учебного заведения единой учебной платформы, ресурсного обеспечения, партнерства, индивидуального выбора преподавателем форм и методов дистанционного обучения, разумной нагрузки участников образовательного процесса, ее еженедельного планирования. Педагоги оценивают существующие меры по повышению эффективности дистанционного обучения выше, чем ученики и родители. В общем оценка родителями результативности удаленных форм и средств обучения является низкой. Исследование выявило гендерные различия в оценке качества дистанционного обучения. Кроме того, участники опроса на основе накопленного опыта высказали свое видение будущего образовательной системы.

Ключевые слова дистанционное обучение; вызовы COVID-19, инструменты дистанционного обучения.