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THE RESPONSE OF UKRAINIAN TEACHERS TO COVID-19: CHALLENGES AND NEEDS IN THE USE OF DIGITAL TOOLS FOR DISTANCE LEARNING

Abstract. The article features the results of a survey on the challenges and needs of the Ukrainian teachers in the implementation of distance education in the conditions of quarantine caused by the COVID-19 pandemic. The survey was carried out by the Comparative Studies Department for Information and Education Innovations of the Institute of Information Technologies and Learning Tools of the NAES of Ukraine in 2020. The study is based on the 607 responses of educators from all-over Ukraine to the online questionnaire conducted between March 27 and April 4, 2020. The content of the questionnaire covered the following topics: educational qualification of teachers, number of screen hours, problems with the access to necessary information, access to the Internet, digital tools that teachers use for distance learning, teachers' needs in the professional development regarding the use of ICT. The obtained answers allowed providing recommendations for public education authorities, decision makers, institutions of secondary, higher and postgraduate education on the improvement of teachers' digital competence, organization of online communication and Internet access on the workplace to digital tools for distance education. The recommendations are based on the responses of the international educational community and organizations (OECD, PISA, UNESCO, and Council of Europe) to COVID-19, in comparison with the Ukrainian realities reflected in the online survey. The novelty of the study presented in the article lies in the fact that it gives a response to the needs that Ukrainian teachers identified in the first weeks of the quarantine. It can be used to achieve long-term practical results in providing support for schools, teachers, school administrators and students in the organization of distance learning as well as in overcoming barriers to teachers' access to information on the use of digital distance learning tools.

Keywords: teachers; distance learning; digital learning tools; COVID-19.

1. INTRODUCTION

Statement of the problem. Ukrainian schools closed their doors and transitioned to distance learning in March 2020 as part of a national social distancing and quarantine in response to the COVID-19 pandemic. Over the last decade, the Ukrainian education system has been paying close attention to the need to integrate ICT into all learning processes. This applies to education strategies, the digitization of schools, new online teaching methods and tools, and the use of digital technologies in the real learning process. However, in practice, the real problem of creating conditions and implementing distance learning arose both in Ukraine and around the world only recently, when quarantine measures were introduced to fight the spread of COVID-19.

The main issue on the agenda of education systems in many countries in the context of the pandemic caused by COVID-19 is the organization of online learning for all learners and the mobilization of all human educational resources for this process. COVID-19 has become a catalyst for educational institutions around the world to find innovative solutions in a relatively short period of time.

Between March 27 and April 4, 2020, scholars of the Institute of Information Technologies and Teaching Tools of the National Academy of Educational Sciences of Ukraine conducted an online survey on the needs of teachers and other categories of educators in distance learning and professional development during quarantine related to the spread of COVID-19 in Ukraine. The survey was conducted in order to assess the situation in distance education during the quarantine, as well as to provide recommendations to relevant stakeholders. The online survey was aimed at identifying public opinion on the effectiveness of using the online tools for distance learning, as well as identifying educational resources and e-learning tools for distance learning that are most in demand among teachers.

Analysis of recent research and publications. The use of ICT by teachers is featured in the works of domestic scientists and practitioners: V. Yu. Bykov, O. Yu. Burov, V. P. Bepalko, A. M. Gurzhiy, M. I. Zhaldak, Yu. O. Zhuk, T. I. Koval, V. V. Lapinsky, A. F. Manako, N. V. Morse, E. I. Mashbyts, O. O. Oliynyk, O. V. Spivakovsky, S. O. Semerikov, O. M. Spirin, Yu. V. Trius, and others. These scholars research the approaches to the ICT use by educators, the development of learners' digital competence, the organization of the digital environment in educational institutions, and the development of the curricula at in-service teacher training institutions.

The theoretical and practical issues of teachers' professional development based on the use of ICT are investigated in detail in the works of A. M. Gurzhiy, S. G. Litvinova, M. V. Noskova, N. M. Mukan, O. O. Oliynyk, M. M. Pshukova and others. The works of the abovementioned scholars as well as the international educational organizations' expertise served as the background of this study.

The aim of the article is to reveal the needs of Ukrainian educators regarding the improvement of their professional skills in the use of digital tools for distance learning during COVID-19 quarantine and to provide appropriate recommendations to Ukrainian stakeholders and decision makers.

2. RESEARCH METHODS

In our research, we used the following theoretical and empirical methods: a) analysis of pedagogical literature; b) comparison and synthesis of different approaches to the problem under study from the international experience perspective; c) retrieval of information; d) observation and survey (questioning); e) computational methods of information processing. A particular attention was paid to the open-ended questions. An online questionnaire was developed based on the expertise of international organisations, among which are: OECD, PISA, Council of Europe, and UNESCO. The Digital Competence Framework for Educators (2017) was taken into account in the process of the questioning. The questionnaire for educators was done in the Google Forms.

3. RESEARCH RESULTS

3.1. International approaches to the COVID-19 response in education

In the recent weeks, in view of the introduction of quarantine in various countries affected by the COVID-19 pandemic, most international organizations have made statements and a number of recommendations for education systems that can be used by countries to make policy decisions and implement specific action plans. M. Fassari, Chairman of the Steering Committee on Education Policy and Practice of the Council of Europe, stated that education is one of the sectors most affected by the crisis related to the COVID-19 pandemic. Education authorities in the 50 member states of the CoE European Cultural Convention are faced with the task of ensuring continuity of education process, including assessment and examinations, as well as minimizing the impact on students and teachers [1].

The Education Department of the Organization for Economic Co-operation and Development has published a response to the situation in education systems in countries where institutions face challenges in organizing distance learning. The OECD has presented a number of measures that can be taken to address these issues. These are, above all, the response to the current crisis, as well as the best practices of OECD member countries, education standards of the Council of Europe, new and existing educational resources to address current problems that can be used by teachers, other professionals and the general public [2].

The Organization for Economic Co-operation and Development has published the Framework Guidelines for Education's Response to the COVID-19 2020 Pandemic, based on data collected in the latest PISA study. The purpose of the report is to support decision-making in education to develop and implement an effective educational response to the COVID-19 pandemic. Heads of educational systems and organizations are asked to develop plans for continuing education using alternative methods for the period of necessary social isolation. Based on a rapid assessment of educational needs and existing responses in ninety-eight countries, the report identifies the most important needs to be addressed in these plans, as well as areas that may be more problematic in the implementation of the plans [4].

The UNESCO Institute for Information Technologies in Education has published the statement "Combat COVID-19: Keep learning. Together we are on the move!". In response to a surge in school and university closures to contain the spread of COVID-19, on 10 March 2020 UNESCO convened a global videoconference of high education officials to step up the emergency response and share strategies to minimize learning disruption worldwide. As emphasized by Mrs S. Giannini, UNESCO's Assistant Director-General for Education: "We need to come together not only to address the immediate educational consequences of this unprecedented crisis, but to build up the longer-term resilience of education systems" [5]. UNESCO proposed a range of training courses for teachers online in different languages on the platform of the International Institute of Online Education (IIOE) that allows teachers to gain most in-demand comprehensive skills, access quality cutting-edge courses and pragmatic web tools, witness self-improvement through the ICT-competency assessment, carry out blended and online learning and gain on-site training opportunities, co-create local digital learning resources databases and much more [6].

3.2. Ukrainian realities and responses to COVID-19 in education: survey background

An online survey of educators was conducted based on the need for a rapid and adequate response to the situation related to the introduction of a national quarantine for the spread of the COVID-19 virus in Ukraine. The following regulations were taken into account:

- Resolution of the Cabinet of Ministers of Ukraine # 211 of March 11, 2020 "On prevention of the spread of corona virus COVID-19 in Ukraine";

- Resolution of the Ministry of Education and Science of Ukraine # 406 of March 16, 2020 "On organizational measures to prevent the spread of coronavirus COVID-19";
- Article 32 of the Law of Ukraine "On protection of the population from infectious diseases", Decree of the President of Ukraine #87 / 2020 of March 13, 2020;
- Decree of the President of Ukraine "On the decision of the National Security and Defense Council of Ukraine of March 13, 2020 "On urgent measures to ensure national security in the event of an outbreak of acute respiratory disease COVID-19 caused by coronavirus SARS-CoV-2 ";
- sub-paragraph 2 of paragraph 13 of the Regulation on the Functional subsystem for teaching preschool children, pupils and students to act in emergency situations (on life safety) of the unified state civil protection system, approved by the order of the Ministry of Education and Science of Ukraine # 1400 of 21 November 2016;
- Recommendations of the World Health Organization 2020.

The online survey was aimed at implementing the following tasks:

- to collect data on the attitudes and needs of teachers and other categories of educators in the implementation of distance learning and professional development during the quarantine;
- to identify the needs to improve the professional level of teachers in the use of digital learning tools and ICT for distance learning, communication with parents and the public, organizational issues;
- to identify problems and provide recommendations to stakeholders and decision makers in order to improve the professional level of teachers in the use of digital learning tools and ICT for distance learning.

During the survey, we followed the general scientific approaches set forth in the "Regulations on the formation, conduct and control of scientific research and scientific and technological (experimental) developments at the National Academy of Educational Sciences of Ukraine" #1-2/14-350 dated December 20, 2018. The following approaches are taken as a basis:

- novelty and relevance;
- compliance with the priorities of state policy and thematic areas of research in scientific and technological development;
- practical usefulness, possibility of implementation of the given recommendations and conclusions;
- availability of previous experience and achievements of scientists in performing scientific research.

3.3. Online survey results

Following the introduction of mandatory distance learning by the government and relevant governmental agencies, teachers faced real challenges in implementation of this form of learning that need to be urgently addressed. Therefore, there was an urgent need to conduct this survey to understand teachers' attitudes and needs concerning the use of digital tools and ICT during quarantine. The survey was conducted at the national level, was anonymous, and the sample of respondents was not representative. The questionnaire was distributed through several channels: mailing to schools in different regions of Ukraine, posts on the Facebook page, advertisements on the websites of the Institute of Information Technologies and Learning Tools and on the web-page of the National Academy of Educational Sciences of Ukraine. These channels collected answers from 607 respondents within two weeks [7].

The respondents were mainly school teachers (73%), school principals, as well as methodologists and teachers of postgraduate pedagogical institutions and pedagogical

universities, practising psychologists, social workers, club leaders, teacher assistants and school librarians.

The survey was conducted online, so it should be noted that respondents were already familiar with digital technologies and answered the questionnaire, taking into account their own experience in using ICT. Teachers who do not have access to broadband Internet, are not provided with digital means of communication, do not know how to use the means and for various reasons could not or did not want to provide their answers were left out of the survey.

There is an opinion among the pedagogical community that the implementation of ICT and the application of digital tools in the general secondary education system is not very effective, but 95.5% of respondents answered that they provide distance learning in the quarantine. At the same time, most of them spend from 2 up to 6 hours on self-education on the use of ICT for distance learning.

Among the respondents there were people with a variety of educational qualifications, however, the vast majority of respondents are teachers, and in particular, primary school teachers. This testifies to their greater activity in conducting distance learning connected with their involvement in New Ukrainian School reform (NUS).

Analysis of responses by type of the respondents' professional qualification shows that 73% of them are teachers. This may mean that it was teachers who were the first to face new challenges related to the organization of the distance learning process with their students, and that these teachers actively addressed these challenges during the quarantine.

The results of the survey show that 95.5% of respondents carry out educational activities in the quarantine, which tells us about the teachers' responsible attitude to their work. To do this, the vast majority of respondents used, first of all, those online tools that they confidently used before the introduction of the quarantine, for example, Viber - 88.2% and the school website - 62.7%.

A positive trend is observed in the fact that 61% of teachers are actively engaged in self-education to provide and organize distance learning. At the same time, the main demand is for lessons on the YouTube channel - 72.9%, materials for educators on EdEra - 42.3% and Prometheus platforms - 32.5% (Fig.1).

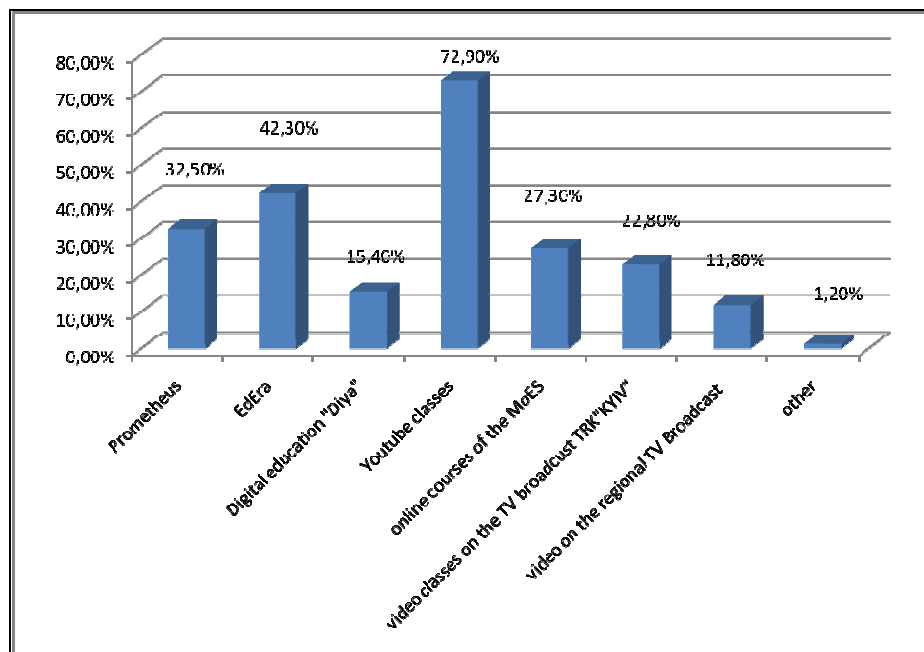


Figure. 1. Digital tools used by teachers to organize distance learning during quarantine

The most effective forms of professional development for teachers are webinars, online courses and workshops, online conferences, online seminars and projects. This should be taken into consideration by in-service teacher training institutions. On the positive side, teachers have begun to master new online tools and look for learning platforms that are convenient for them and their students to provide group distance learning.

Issues related to the teachers' problems and needs in implementing distance learning and raising their awareness of the use of online tools revealed the following gaps and obstacles:

- lack of clear instructions on the use of online tools (especially topical for practising psychologists, social workers and teacher assistants);
- low level of readiness of teachers and educational institutions (predominant grade 3 on a 5-point scale) for online communication in the quarantine; low ability to share experience among colleagues (66.8%);
- limited Internet access - 35.2%;
- insufficient experience - 58.7%;
- insufficient information about online tools - 20.2%;
- vague instructions from the school administration - 10%;
- insufficient motivation - 7.8%.

The respondents also point to restrictions that do not depend on the education system: network congestion, limited access of students to the Internet, parents' unpreparedness, lack of technological support and equipment at home, etc.

Regarding the respondents' status in terms of their professional communication with colleagues and the use of online networks and distance learning tools, it was found that almost half of the respondents are members of professional communities (50.6%), the rest do not participate in professional communication in online communities. At the same time, the respondents noted that they take information about the latest updates and news, as well as distance learning tools from social networks (76.3%). Also, 65.7% receive news from the school administration; 69.3% - from the Ministry of Education and Science of Ukraine website; and only 38.2% receive updates with the newsletters from institutions providing in-service teacher training education. This may indicate low activity of these institutions, their failure to provide attractive and clear instructions and effective information materials on the use of digital media in the quarantine (Fig.2).

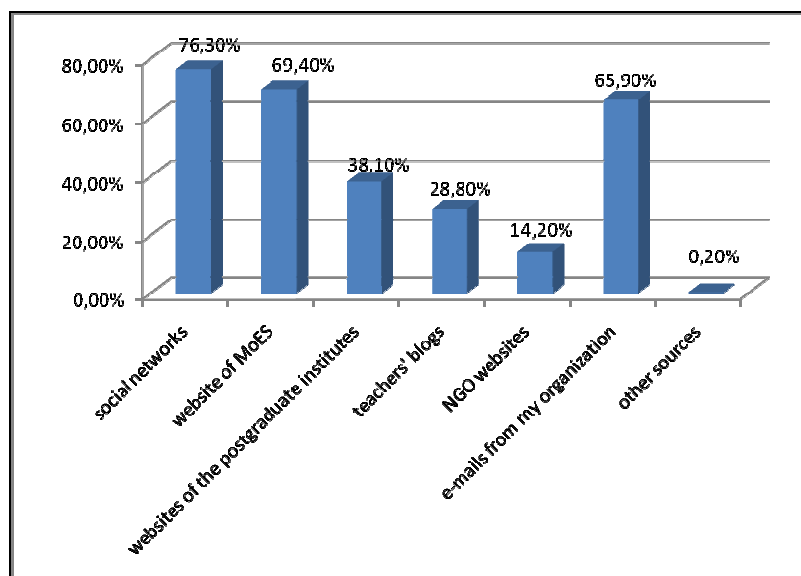


Figure2. Respondents' answers on where they follow the news about distance learning courses during quarantine

4. CONCLUSIONS AND PROSPECTS OF FURTHER STUDIES

The obtained results allow us to conclude that teachers are the main drivers and agents of distance teaching activities in the quarantine: they teach online, advice parents, and study to improve their professional level. These activities should be based on clear instructions from public education authorities and educational institutions and be supported by stakeholders. Integration of common goals, values, tasks, and creating opportunities for students and teachers are the main tasks of the Ukrainian education today.

The results of our survey, in our opinion, can be used by the following parties:

- government agencies, the Ministry of Education and Science of Ukraine, education departments at various levels (to develop action plans, programs, activities aimed at supporting teachers in the quarantine);
- general secondary education institutions and other educational institutions (to build communication channels, provide online support and inform the staff about work plans, available hardware and software, opportunities for students and parents in a particular region and educational institution, rapid response to the needs of teachers and students, support for teacher innovation);
- institutions of postgraduate pedagogical education and other institutions providing teacher training (to provide support of online activities for teacher training, in particular on the use of ICT and distance learning, inform about new online opportunities for teachers, advising them on distance learning);
- research institutions, in particular in the system of NAES of Ukraine (to develop tools and methods to support online learning in various subject areas, identify gaps and offer innovative, effective online tools, and scientific and methodological support that will provide teachers with the latest developments);
- other stakeholders, including civil society organizations (to support online learning in the quarantine, monitor and evaluate the level of access to educational services and the process of ensuring students' rights to education in the quarantine).

Therefore, we recommend that the above-mentioned institutions and stakeholders:

- develop a format and plans for regular communication with teachers to solve problems and respond quickly to the teachers' needs; provide support for improving and updating online teaching methods with students;
- create conditions to provide teachers with access to the Internet and computer equipment for distance learning;
- develop clear guidelines for all categories of teachers, practising psychologists, social workers, teacher assistants, school principals on the use of online tools for distance learning and communication channels with educational institutions and students;
- create and implement in each region of Ukraine the ad-hoc short-term courses on the use of online tools for distance learning (at in-service teacher training institutions and other institutions that provide teacher training). The most effective form of teachers' professional development are webinars, online courses and workshops, online conferences, online seminars and projects;
- expand the range of TV and radio lessons for students on regional media channels;
- introduce a system of online teacher counselling in the quarantine on the use of ICT and distance learning in each in-service teacher training institution. Such counselling should be organized for parents at the school level;
- expand the opportunities for exchange of experience between teachers in the implementation of online learning (based on in-service teacher training institutions, professional communities, and schools);

- develop guidelines for students and parents on the safe use of screen time and online tools to protect students from online threats;
- develop and implement innovative online methods for teaching students that prove their practicality and effectiveness in the quarantine. Such developments must be scientifically sound;
- offer innovative technological solutions for the implementation of distance learning by teachers. At the same time, the private sector and business should be involved too;
- carry out permanent online monitoring of teachers' problems and needs in terms of distance learning and training in order to provide a timely response during the quarantine.

However, our study does not address the full range of the problem related issues. It is important to continue scientific research in the following areas: curricula for in-service teacher training on the use of digital tools by teachers of different subjects; pedagogical and psychological support of teachers providing online teaching in the conditions of quarantine; forms and methods of the development of teachers' digital competence etc.

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ВІДПОВІДЬ УКРАЇНСЬКИХ ВЧИТЕЛІВ НА COVID-19: ВИКЛИКИ І ПОТРЕБИ ВИКОРИСТАННЯ ЦИФРОВИХ ІНСТРУМЕНТІВ ДИСТАНЦІЙНОГО НАВЧАННЯ

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Анотація. У статті розглянуто результати опитування українських учителів щодо проблем та потреб у впровадженні дистанційної освіти в умовах карантину, спричиненого пандемією COVID-19, проведеного відділом компаративістики інформаційно-освітніх інновацій Інституту інформаційних технологій і засобів навчання НАПН України у 2020 р. Дослідження ґрунтується на 604 відповідях освітян з усієї України на онлайн анкету в період з 27 березня по 4 квітня 2020 року. Зміст анкети охоплював такі теми: освітня кваліфікація вчителів, кількість екранних годин, проблеми з доступом до необхідної інформації, доступ до Інтернету, цифрові інструменти, які вчителі використовують для дистанційного навчання, потреби вчителів у професійному розвитку щодо використання ІКТ. Отримані відповіді дозволили надати рекомендації органам державної влади, які формують освітню політику, управлінням освіти та школам, навчальним закладам та закладам післядипломної педагогічної освіти щодо вдосконалення цифрової компетентності вчителів, умов організації онлайн комунікації та доступу до Інтернету на робочому місці, використання цифрових засобів дистанційного навчання. Рекомендації ґрунтуються на відповідях міжнародної освітньої спільноти та організацій на COVID-19 у сфері освіти (OECD, PISA, ЮНЕСКО та Рада Європи) у порівнянні з українськими реаліями, що відображено в проведеному онлайн опитуванні. Новизна дослідження, представленого в статті, полягає в тому, що воно дає відповідь на потреби, які українські вчителі визначили в перші тижні карантину. Результати дослідження можуть бути використані для досягнення довгострокових практичних результатів у наданні підтримки школам, учителям, адміністраторам шкіл та учням в організації дистанційного навчання, а також у подоланні бар'єрів доступу вчителів до інформації про використання цифрових засобів дистанційного навчання.

Ключові слова: учителі; дистанційне навчання; цифрові навчальні засоби; COVID-19.

ОТВЕТ УКРАИНСКИХ УЧИТЕЛЕЙ НА COVID-19: ВЫЗОВЫ И ПОТРЕБНОСТИ ИСПОЛЬЗОВАНИЯ ЦИФРОВЫХ ИНСТРУМЕНТОВ ДИСТАНЦИОННОГО ОБУЧЕНИЯ

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Аннотация. В статье рассмотрены результаты опроса украинских учителей по проблемам и потребностям внедрения дистанционного образования в условиях карантина, вызванного пандемией COVID-19. Опрос проведен отделом компаративистики информационно-образовательных инноваций Института информационных технологий и средств обучения НАПН Украины в 2020 г. Исследование основывается на 604 ответах педагогов со всей Украины на онлайн анкету в период с 27 марта по 4 апреля 2020 года. Содержание анкеты охватывает следующие темы: образовательная квалификация учителей, количество экранных часов, проблемы с доступом к необходимой информации, доступ к Интернету, цифровые инструменты, которые учителя используют для дистанционного обучения, потребности учителей в профессиональном развитии по использованию ИКТ. Полученные ответы позволили дать рекомендации органам государственной власти, которые формируют образовательную политику, управления образования и школам, учебным заведениям и учреждениям последипломного педагогического образования по совершенствованию цифровой компетентности учителей, условий организации онлайн коммуникации и доступа к Интернету на рабочем месте, использования цифровых средств дистанционного обучения. Рекомендации основаны на ответах международного образовательного сообщества и организаций на COVID-19 в сфере образования (OECD, PISA, ЮНЕСКО и Совет Европы)

по сравнению с украинскими реалиями, которые отражены в проведенном онлайн опросе. Новизна исследования, представленного в статье, заключается в том, что оно дает ответ на потребности, которые украинские учителя определили в первые недели карантина. Результаты исследования могут быть использованы для достижения долгосрочных практических результатов в оказании поддержки школам, учителям, администраторам школ и учащимся в организации дистанционного обучения, а также в преодолении барьеров доступа учителей к информации об использовании цифровых средств дистанционного обучения.

Ключевые слова: учителя; дистанционное обучение; цифровые средства обучения; COVID-19.



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