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## Supporting the professional development of Ukrainian teachers to develop their digital competencies

**Słowa kluczowe:** edukacja szkolna na Ukrainie, nauczanie na odległość, narzędzia cyfrowe, kompetencje cyfrowe, doskonalenie zawodowe nauczycieli.

### Introduction

The development of new technologies and significant growth of the information resources cause radical changes in the areas of economy, politics and society. The education sphere is undergoing fundamental changes caused by the influence of information on learning knowledge and the development of human competencies, especially in terms of the needs of life perspectives and career prospects. Digital technologies serve as a potential means for stimulating more inclusive and sustainable development and stimulating innovation, they contribute to increasing the efficiency of educational services. The pandemic has highlighted the need for flexibility in the organization of distance learning and for more time for interaction between students and teachers. As noted by international sources, and in particular in the research done by the World Bank for Reconstruction and Development<sup>1</sup>, the pandemic has changed the role of teachers.

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<sup>1</sup> M. Barron, C. Cobo, A. Munoz-Najar, I. Sanchez Ciarrusta, *The changing role of teachers and technologies amidst the COVID 19 pandemic: key findings from a cross-country study*, [www.blogs.worldbank.org/education/changing-role-teachers-and-technologies-amidst-covid-19-pandemic-key-findings-cross](http://www.blogs.worldbank.org/education/changing-role-teachers-and-technologies-amidst-covid-19-pandemic-key-findings-cross) (access: March 21, 2023).

Among the researchers dealing with the issues of distance learning organization during the forced quarantine are Melissa Bond<sup>2</sup>, who analyses the impact of the Coronavirus pandemic on the organization of the learning process at school. Clayton Whittle, Sonia Tiwari, Shulong Yan and Jeff Williams<sup>3</sup>, who developed a framework grounded in the experiences of teachers, present a theoretically grounded approach to teaching in an emergent field; Patty Zakaria<sup>4</sup>, who touches upon the issues of integration of technology into education, the selection of the tools in specific technological and environmental contexts, and who stresses the support the education of children and young adults in a time of crisis. The Ukrainian authors Valerii Bykov, Oleg Spirin, and Olga Pinchuk<sup>5</sup> determine the general approaches to the modern stage of informatization in educational institutions, pay attention to the role of teachers in the development of a digital environment and emphasize the need to constantly improve the professional level of pedagogical workers in the use of ICT for the organization of the educational process. Iryna Ivaniuk and Oksana Ovcharuk<sup>6</sup> carry out an analysis of using digital tools by Ukrainian teachers for the organization of distance learning. The Polish author Krzysztof Gurba<sup>7</sup> carries out an analysis of the distance education during the pandemic in the assessment of school principals. Ewa Pisula, Daniel Pankowski, Iwona Nowakowska, Anna Banasiak, Kinga Wytrychiewicz-Pankowska, Milena Markiewicz and Aleksandra Jórczak<sup>8</sup> present the results of their research on the teaching methods used by schoolteachers during the pandemic SARS-CoV-2.

Ukrainian school education today faces a number of challenges caused by the processes of digital transformation of society and education in particular, inclu-

<sup>2</sup> M. Bond. *Schools and emergency remote education during the COVID-19 pandemic: A living rapid systematic review 2020-2021* "Asian Journal of Distance Education", 15(2), pp. 191-247.

<sup>3</sup> C. Whittle, S. Tiwari, S. Yan, J. Williams. *Emergency remote teaching environment: a conceptual framework for responsive online teaching in crises*, "Information and Learning Sciences", 121(5/6), 2020, pp. 311-319.

<sup>4</sup> P. Zakaria. *Education Under Attack: An Examination of Education in Emergencies and Strategies for Strengthening Education*, [in:] *Teaching in the PostCOVID-19 Era*, ed. by Ismail Fayed, Jill Cummings, 2021, pp. 149-156.

<sup>5</sup> V. Bykov, O. Spirin, O. Pinchuk, *Modern tasks of digital transformation of education*, "UNESCO Chair Journal lifelong professional education in the XXI century" no. 1, 2020, pp. 27-36.

<sup>6</sup> I. Ivaniuk, O. Ovcharuk, *Problems and needs of teachers in the organization of distance learning in Ukraine during quarantine caused by COVID-19 pandemic: 2021 research results*, "Information Technologies and Learning Tools", vol. 85, no. 5, 2021, pp. 29-41.

<sup>7</sup> K. Gurba. *Edukacja na odległość w czasie pandemii w ocenie dyrektorów szkół*, [in:] *Wyzwania dla edukacji w sytuacji pandemii COVID-19*, ed. by N. Pikuła, K. Jagielska, J. Łukasik, Kraków 2020, pp. 151-178.

<sup>8</sup> E. Pisula, D. Pankowski, I. Nowakowska, A. Banasiak, K. Wytrychiewicz-Pankowska, M. Markiewicz, A. Jórczak. *Nauczyciele w sytuacji powrotu do szkół w czasie pandemii SARS-CoV-2. Raport z badań przeprowadzonych od 10 września do 10 października 2020*. 2020, pp. 1-50, [www.osf.io/6znce/](http://www.osf.io/6znce/) (access: March 22, 2023).

ding the access to quality educational experience, the need to develop outdated teaching methodologies, the need to prepare students to become part of the new workforce in the future, a new generation of young people who are increasingly refusing traditional approach and teaching methods, the importance of the teachers' professional development etc.

The full-scale Russian aggression against Ukraine, which began in 2014 and continued with the invasion of Russian troops on February 24, 2022, continues today. Since the first days of the war, our state has suffered significant losses in all regions of the country in terms of human potential and infrastructure, and in particular, the destruction of educational institutions. A significant number of pupils and students cannot attend schools and universities. Teachers have faced difficulties and, sometimes, the impossibility of carrying out the educational process. The ability of teachers and school heads to organize the educational process remotely has recently become the key skill.

The Ministry of Education and Science of Ukraine, together with the Ukrainian Institute for the Development of Education and the Ministry of Digital Transformation of Ukraine, launched the "All-Ukrainian Online School" platform for distance and mixed learning in order to ensure equal access to quality school education for students in grades 5-11<sup>9</sup>. As of August 2022, "The All-Ukrainian Online School" platform offers 2199 lessons for schools, i.e. 73 educational courses out of the 3500 originally planned. External assistance is crucial to ensure the delivery of quality educational materials for students and teachers. This platform provides students with video explanations, a synopsis, tests and the ability to track their educational progress. For teachers, the online platform contains the necessary methodological recommendations and examples of the use of modern educational technologies. This is a kind of the professional support of the Ukrainian teachers. Currently, the content of the platform is designed for two weeks of training according to the calendar plan, and it will be supplemented every week. The functionality of the platform is constantly improving and expanding. It is important to note that the platform provides access to educational content in Ukrainian for children and teachers living in the temporarily occupied territories of Ukraine and also for children who for various reasons left their homeland and want to study following the Ukrainian national curriculum abroad.

In this context, it is important to improve the qualifications of Ukrainian teachers with regard to the technologies used by the "All-Ukrainian Online School" platform. In order to verify the effectiveness of its use and of other selected digital resources, the authors conducted a study investigating the questions of how teachers demonstrate their willingness to use these tools, what kind of training they need today, and what issues remain unresolved yet.

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<sup>9</sup> All-Ukrainian Online School platform, [www.lms.e-school.net.ua/](http://www.lms.e-school.net.ua/) (access: March 22, 2023).

## Presentation of the Main Findinings

To improve the qualifications of teachers, the project Finland's Support to the Ukrainian School Reform, known as the Project "Learning Together", in cooperation with the Ministry of Education and Science of the Ukraine held a series of webinars in the framework of the course "ICT in Pedagogy" during November and December 2022, designed for 24 teaching hours<sup>10</sup>. The aim of the course was the following:

- to develop competences in planning and conducting pedagogically significant training with the help of distance/online education;
- to increase competence in the use of digital technologies in distance/online and hybrid education, using a wide range of relevant technologies;
- to exchange best practices and experimental solutions for distance/online education in Ukraine and Finland for use by teachers and schools; the particular attention was paid to the practice of teaching in the 5th-6th grades;
- to familiarize yourself with various pedagogical solutions and means of organizing hybrid education, i.e. mixed learning with the use of ICT;
- to promote joint learning and exchange of best practices.

The Zoom platform was chosen for the format of teacher training. The main target groups were teachers-coordinators of the New Ukrainian School, specialists/teachers of postgraduate pedagogical education institutions at the primary school level, and teachers of various subjects (5-6 grades).

The following topics and key contents of the course included: "Pedagogy and practice of distance/online learning" (challenges of distance/online learning; diverse ways of distance and hybrid learning; pedagogical approaches on digital learning; the All-Ukrainian School Online platform and a Finnish case study); "Use of digital technologies in distance/online education" (role of digital technology in teaching and learning; ideas and practices for using of digital technology; case studies); "Distance/online learning planning" (pedagogical founding structures; practical procedure and criteria for the planning of a distance and hybrid study/course); "Providing support to students during distance/online learning" (providing support to learning and distance working skills; how to activate students; how to support collaborative work); "Online assessment; support of cooperation between representatives of the educational community" (assessment of a student's learning – a teacher's skills and assessment culture in school; diverse assessment needs vs. good practices of online assessment; practical case studies); "Exchange of best practices of Finland and Ukraine" (sharing of good practices of using ICT in pedagogy; paths for continuous professional development).

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<sup>10</sup> Learning Together Project, [www.nushub.org.ua/lt/en/about-us/](http://www.nushub.org.ua/lt/en/about-us/) (access: March 22, 2023).

In order to present the results, we divided the teachers' feedback into the following groups: a) feedback from respondents regarding the urgent needs in the use of ICT for professional development; b) feedback on the program by which the teachers upgraded their qualifications; c) feedback from respondents regarding the effectiveness of training in the course "ICT in Pedagogy"; d) rating of course topics by teachers; e) level of the respondents' confidence on that after the training they will be able to use the acquired knowledge and educational materials in their practical work; f) what online instruments teachers use to conduct lessons; j) open answers and suggestions.

Before the course, an initial survey on how the teachers consider the following to be relevant areas of professional development of NUS teachers regarding the use of ICT was conducted (the numbers range from the highest to the lowest):

- assessment in distance learning conditions – 91.1%;
- method of conducting online lessons - 82.2%;
- learning to use creative online tools and services - 80%;
- training to create video and audio lessons, blog - 62.2%;
- familiarization with new sites for working with students - 62.2%;
- receiving practical help in mastering new tools from In-Service Teacher Training Institutes (ITTIs) specialists – 55.6%;
- receiving quick online consultations on specific issues of using ICT from ITTIs specialists – 44.4%;
- courses for primary school teachers – 44.4%;
- courses for secondary school teachers – 42.2%;
- ensuring accessibility to online courses, webinars – 33.3%.

After the course, an initial survey was conducted on how the teachers assessed its effectiveness, which topics were important to them, and what knowledge they gained. 107 respondents were interviewed: 41.2% of respondents constituted the teachers-coordinators of the New Ukrainian School for grades 5-6, 12.7% of respondents are the teachers-coordinators for primary school, 46.1% of respondents are the representatives of the teaching staff of teacher training institutions. At the same time, the gender distribution was 92.2% female; and 7.8% are men.

In order to generalize the questions into semantic associations, the following three semantic criteria were defined: acquiring new knowledge, acquaintance with new practices and tools, and mastering practical skills. Respondents were asked to rate them on a 5-point scale. "Acquiring new knowledge" was rated quite highly by

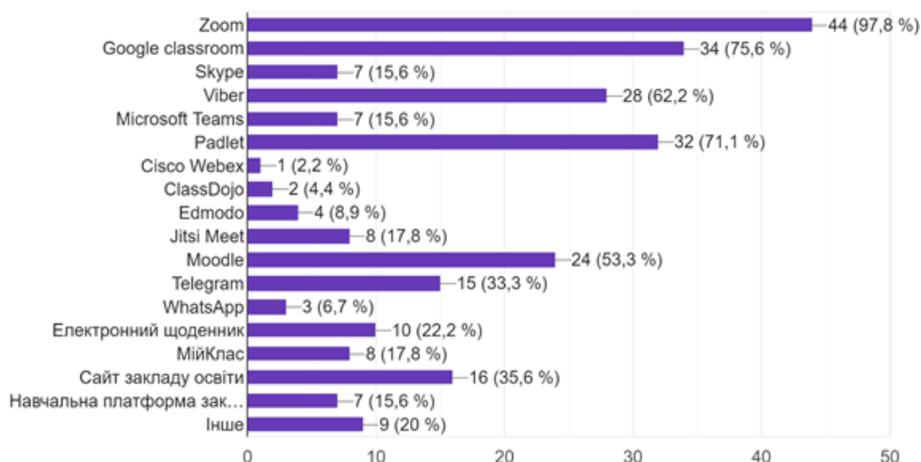
the participants: 67.65% of respondents gave the highest rating - 5 points, 28.43% of respondents indicated 4 points, 2.94% of respondents gave 3 points, 0.98% of respondents gave 2 points. The criterion "Acquaintance with new practices and tools" received the following ratings from the participants: 76.47% of respondents gave 5 points, 18.63% of respondents gave 4 points, 3.2% of respondents gave 3 points, 0.98% of respondents gave 2 points. The criterion "Mastering practical skills" received the following ratings from the participants: 5 points were given by 63.73% of respondents, 4 points by 31.37% of respondents, 3 points by 3.92% of respondents, and 2 points by 0.98% of respondents. 86.27% of respondents rated the practicality of the provided work methods for working with teachers as 5 points, 9.8% of respondents as 4 points and 3.92% of respondents as 3 points. The received answers indicate that the most important thing for teachers is the need to get acquainted with new practices of using new tools at school, as well as to acquire new knowledge, which indicates the importance of constant training of teachers in the use of ICT. These results demonstrate that respondents are confident that new practices and tools can help them to acquire knowledge in order to effectively use ICT in classroom. They indicate that the practical skills are crucial for them in this period.

The distribution of respondents' answers by webinar topics within the course was as follows:

- Webinar 1. Pedagogy and practice of distance learning 85.29% of respondents rated it at 5 points, 12.75% of respondents rated it at 4 points, 1.96% of respondents rated it at 3 points.
- Webinar 2. The use of digital technologies in distance/online education was rated by 88.24% of respondents at 5 points, 10.78% of respondents rated it at 4 points, and 0.98% of respondents rated it at 3 points.
- Webinar 3. Distance/online learning planning 87.25% of respondents rated it at 5 points, 10.78% of respondents rated it at 4 points, 1.96% of respondents rated it at 3 points.
- Webinar 4. Providing support to students during distance/online learning 87.25% of respondents rated it at 5 points, 10.78% of respondents rated it at 4 points, 1.96% of respondents rated it at 3 points.
- Webinar 5. Evaluation of training results 88.24% of respondents rated it at 5 points, 9.8% of respondents rated it at 4 points, 1.96% of respondents rated it at 3 points.
- Webinar 6. Cooperation between representatives of the educational community 88.31% of respondents rated it at 5 points, 10.78% of respondents rated it at 4 points, and 1.96% of respondents rated it at 3 points.

The level of the respondents' confidence about their ability to use the acquired knowledge and educational materials in their practical work after the training was determined as follows: quite sure that they will be able to use it - 62.7%; rather, they are sure that they will be able to use it - 35.3%; rather they are not sure that they will be able to use it - 1%; absolutely not sure that they will be able to use it - 1%.

It was important to realize what online instruments teachers use to conduct their lessons. The Diagram 1 demonstrates that among the most popular are: 97,8% teachers use Zoom platform, 75,6% - Google Classroom, 71,1% - Padlet, 62,2% - Viber, 53,3% use Moodle platform. Less frequently teachers use Skype, Cisco Webex, Telegram, WhatsApp, and other.



**Diagram 1.** Teachers' answers on the question about the instruments that they often use for the organization of distance learning.

Source: own elaboration.

In the open-ended questions, the respondents expressed thanks to the course trainers for enabling them to increase their professional level regarding the introduction of information and communication technologies into the educational process of the educational institution. They appreciated coverage of the topic of using digital technologies in online education; for useful advice and interesting distance learning practices, as well as for affordable organization of training in such a difficult period. One of the participant's comments stated: "We have already started using some tools in distance learning. The training sessions were held in the atmosphere of warmth and trust. I felt support from moderators, organizers

and trainers. It was especially interesting to learn about the Finnish experience of the “pandemic” distance education, the studies organized in the Al-Hol detention camp, about online assessment practices and the experience of the Roihuvuori school. The training was meaningful and important – I plan to use its results when working with Ukrainian educators”<sup>11</sup>.

Answering the open-ended questions of the questionnaire, the respondents were asked to specify the topics for professional development that would be of interest to them in the future. The respondents indicated the following topics: safe digital environment of an educational institution, Ukraine’s experience in the digitalization of education, demonstrating examples of online lessons with students, further revealing the Finnish experience of the “pandemic” distance education, conducting a separate additional webinar to share the experience with the course participants.

## Conclusions

An important element of this work was the analysis of the possibilities of improving the qualifications of teachers on the use of information and communication technologies and the digital educational environment for the implementation of the educational process, that is in the context of modern educational reforms. The obtained results gave us grounds to draw conclusions regarding the improvement of the qualifications of teachers and coordinators of the New Ukrainian School with their use of ICT for the organization of the educational process. These include the following: creation of continuous training courses for teachers on the use of digital tools in institutions responsible for the professional development of teachers; conducting constant monitoring of teachers’ access to digital tools and identifying problems; psychological support of teachers who work remotely with students; creation of the virtual “educational camps” that teachers can learn from and inspire one another to enhance their professional skills with the goal of improving student outcomes.

It should be noted that for the period of 2022, Ukrainian teachers acutely felt the need to improve their professional skills in the use of ICT due to many circumstances. First of all, these processes were affected by the pandemic of 2020-2022, which caused the closure of schools and the transition to the remote form of work.

The training conducted according to a special course for teachers of the New Ukrainian School for 24 school hours proved the readiness of teachers to use di-

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<sup>11</sup> *Three Webinar Programs on Teacher Professional Development Are Completed*, [www.nushub.org.ua/lt/en/news/three-webinar-programs](http://www.nushub.org.ua/lt/en/news/three-webinar-programs) (access: March 22, 2023).

digital tools for organizing lessons and their familiarity with the main tools. This was proved at the beginning of the large-scale invasion of the Russian Federation into Ukraine, when some schools were forced to switch to distance and hybrid learning.

However, at the same time, the survey conducted among teachers revealed the need for continuous teacher training. The respondents expressed their wish to learn new methods and techniques of using ICT in classroom, and the ability to create their own video lessons, studying the experience of Finland and other countries.

During the research, it became obvious that the period of the forced quarantine during the pandemic allowed Ukrainian teachers to turn more to the use of digital tools for the organization of learning. This affected their level of digital literacy and ability to combine digital technologies with didactic tasks. However, after the beginning of the large-scale offensive of the Russian Federation on Ukraine, teachers faced additional issues, which today require an urgent solution. Therefore, our further efforts will be aimed at identifying the problems of teachers and finding solutions to improve the organization of the educational process in schools with the use of ICT. Therefore, in the future, we consider it important to create programs for teachers of various categories on the use of ICT for the organization of education process, which takes into account teachers' needs and demonstrate the best European experience. The creation of consultation clusters in different regions of Ukraine that can provide advice to teachers on the use of online tools, the exchange of positive practices can become an effective mechanism for overcoming gaps in this area.

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