

Challenges, opportunities and readiness for using digital instruments by Ukrainian teachers: 2024 survey results

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Abstract. Teachers worldwide are increasingly using digital tools and resources as part of their everyday teaching practices. However, in Ukraine, where the education system has already suffered significant losses due to the post-war period, the challenge of implementing distance learning is even greater. This is particularly true considering the ongoing wartime situation until February 24, 2022. For the second year in a row, a study is being conducted to assess the readiness of schools and teachers to use digital means for learning and to identify any challenges they may be facing in this regard. In 2024, 26,227 teachers and teaching staff from all regions of Ukraine, including some from the occupied territories, were interviewed. It found that teachers continue to actively use digital tools for teaching, and the survey identified the most popular of these tools. The teachers also pointed out the numerous problems they face every day during the organisation of education. Unfortunately, most of these problems are related to the limitation of students' access to full-time education, the loss of school infrastructure and the internal displacement of families. The purpose of this article is to identify teachers' opinions about their readiness to use digital tools, identify issues and challenges related to this, and outline perspectives for helping teachers improve digital competencies. The article outlines a picture of the state of the use of digital tools for learning by Ukrainian teachers during the period of martial law and their need to solve the problems and challenges they faced. The findings contribute to a better understanding of the teachers' needs and can serve for their professional development.

Keywords: Readiness. Digital Tools. School Digital Environment. Teachers' Professional Development.

1 Introduction

Today, teachers are actively involved in digital education and use digital tools for learning in their practice. After a long period of Covid-quarantine, teachers learned how to use ICT quickly and effectively in the classroom and for professional development. In Ukraine, where Russian aggression is taking place, many schools and, accordingly, students and teachers are deprived of the opportunity to teach face-to-face. They are forced

to organise work with their students online. Such a situation requires careful study of the state of affairs, as well as attention to the problems and challenges facing teachers today. Special attention needs to be given to the use of digital tools and resources for school learning, the issue of time spent on preparing lessons, professional development and how the use of digital tools and ICT has affected the educational outcomes of students, as well as the daily challenges faced by teachers. In recent years, Ukraine has adopted several legislative acts related to the organisation of online education during quarantine and martial law, in particular the Law of Ukraine on Amendments to Chapter X "Final and Transitional Provisions" of the Law of Ukraine "On Comprehensive General Secondary Education" regarding the regulation of certain issues of educational activity in the conditions of martial law, where it is indicated about the transition to full and partial online education depending on the region [1].

At the international level, issues of digital education are announced in international strategic documents. In particular, the SDG Digital Acceleration Agenda adopted in 2023 emphasises that digitalisation is transforming countries, communities, economies, and societies, and could be a crucial catalyst for achieving the Sustainable Development Goals (SDGs) [2]. This document testified about significant gaps in the digital skills of citizens of different countries, as well as inequalities in the realisation of women's rights and access to digital technologies, and unequal access to educational digital resources in different countries, including between rural and urban areas. Moreover, goal 4 (Quality education) specified in the Sustainable Development Goals emphasizes the need for accessible and affordable connectivity that allows young people to use open, free and high-quality digital skills and training platforms [3]. Since teachers are carriers of necessary knowledge and mediators between students and the educational system in the development of digital overhangs, their needs are becoming a priority task in the educational field today. The 2024 survey identified areas of importance to teachers such as the needs and opportunities for in-service training in digital skills, the most popular digital resources to use in the classroom, and their views on adapting students to war-time conditions. These studies have already been conducted for three years in a row by the Institute of Digitalization of Education of the National Academy of Educational Sciences of Ukraine, which provides an opportunity to compare the results during the years of the war period.

2 Literature review

Research related to the study of teachers' attitudes to the use of ICT in secondary schools in Hungary, Lithuania, and Poland is described in the works of V. Grigas, M. Vincas, A. Mierzecka, T. Tomori, T. Koltay, who interviewed teachers teaching in 9-12 grades of high school in 2019. The results obtained by the researchers proved that the teachers they interviewed overestimated their knowledge of information literacy, and teachers in all three countries admitted that they were not capable of teaching media and information literacy because of the lack of professional training. [4]. M. Guitert, T. Romeu, and P. Baztán explore the performance criteria for students' digital competence. They use feedback from teachers to define the skills, knowledge, and values necessary

for primary and secondary students to develop their digital competence [5]. A. Muneeba discusses the professional development of teachers in the post-COVID era, highlighting current trends in teacher professional development post-COVID. These trends include the use of digital platforms, microlearning, and the integration of social-emotional learning [6]. B. Bhavya, Neeraz, S. Parween, J. Bagawade, S.Kumar, S. Swarnalatha identify areas of strength and weakness among college teachers, educational institutions can develop targeted professional development programs to enhance technological proficiency and promote innovative teaching methodologies [7]. In examining the professional development needs of teachers, K.Stutchbury, M.Ebubedike, S.Amos, L.Chamberlain propose to harness the potential of MOOCs (massive open online courses) and conduct surveys and in-depth interviews with participants to explore participants' motivations and aspirations, as well as evidence of impact [8].

Professional development of teachers in the use of ICT today is carried out in the context of internationally recognised framework documents. In particular, R.Vuorikari, S.Kluzer, and Y.Punie, who presented the DigComp 2.2, outlined five main areas of digital competence (information literacy, communication and collaboration, digital content creation, safety, and problem solving) and provided a common understanding of this competence which is "...the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It is defined as a combination of knowledge, skills and attitudes." [9]. In light of the common understanding of the importance of teachers' professional development, the European Commission supports teachers by providing them with various courses related to digital education in schools at the European School Education Platform, for example, "Professional Engagement in Digital Education" is one of the courses that reveals how teachers can use technologies to enhance their professional practice, empower their learners and improve learning outcomes [10].

V. I. Kovalchuk, I. Vorotnikova, O. Ovcharuk, I. Ivanyuk, O. Pinchuk, study the issue of professional development of teachers regarding the use of digital tools and ICT among Ukrainian teachers, who pay attention to the attitude of teachers to the use of digital tools for organising work in the classroom and the educational policy of introducing ICT [11], [12]. All these studies indicate the importance and necessity of constantly monitoring the needs of teachers regarding their use of digital tools and technologies in the classroom and the need for continuous professional development.

3 Research methods

In 2024, the Institute for Digitalisation of Education of the National Academy of Educational Sciences of Ukraine conducted its third survey of teachers regarding their readiness and attitude towards using ICT for distance learning. The survey had 26,223 respondents - teachers between February and March 2024. The survey was conducted anonymously and was based on the public opinion of teachers. The author conducted previous surveys in 2022 (54, 254 respondents) and 2023 (42,708 respondents) to provide a comprehensive understanding of teachers' attitudes towards educational setbacks

during the period of martial law in Ukraine [13],[14]. A survey of teachers was conducted using Google Forms, with statistical data processing methods utilised to analyse the results. The survey was made public through professional teacher networks, including social media platforms Facebook and Telegram. To ensure honest responses, the authors guaranteed anonymity and academic integrity. Additionally, the authors considered other studies of teachers during this same period to provide an objective comparison. The results of the 2024 study are currently in the development stage and will be presented in part.

4 Results of the study

In 2024, readers from all regions of Ukraine participated in the survey. The respondents were from various types of educational institutions: lyceums - 50.2%, secondary schools - 23.8%, gymnasiums - 23%, and other types of institutions - 3%. The teaching experience of the respondents varied, with 60.5% having 20 years or more of experience, and 20.8% having less than 20 years of experience. In terms of gender, 10.2% of the respondents were men, while 89.8% were women. Given the wartime in Ukraine, schools work in different modes. Therefore, the respondents represented educational institutions that work full-time - 44.9%, remotely - 25.1%, and in a mixed mode - 30%.

To organise distance learning with students in 2024, teachers mainly use the following tools: Viber - 75%, Zoom - 65.2%, Learningapps.org - 31.1%, Padlet - 25.4%, Telegram - 24.9%, Google Workspace for Education - 21%. In comparison with the year 2023, they used these tools as follows: Viber – 77.7%, Zoom – 63.8%, Learningapps.org – 26.7%, Padlet – 16.8%, Telegram - 26%, Google Workspace for Education – 53.1%. The dynamics of popular tools among teachers showed that in 2024, compared to 2023, the popularity of Learningapps.org and Padlet increased, which may indicate a greater adoption by teachers of certain tools that they did not use before. The use of Zoom, Viber and Telegram, which are well known to the teachers and which they often use to organise distance learning, remained at approximately the same level.

At the same time, teachers noted that they also, to a lesser extent, use other various tools, for example, Skype, WhatsApp, Tik-Tok, Discord, Meet, Classroom, Google Meet, Cisco Webex, etc. (see Fig. 1).

In order to identify the needs of teachers in conducting distance learning and improving their professional level, a question was asked in 2023 and in 2024, where they receive information about distance and professional development courses and which online forms of professional development, they consider to be the most effective.

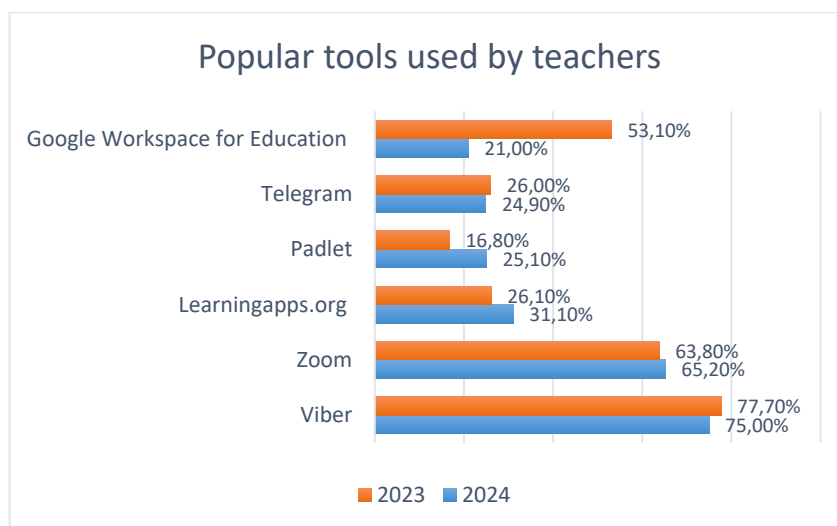


Fig. 1. The most popular tools used by Ukrainian teachers in 2023 and 2024 for organising distance classes in schools.

It is clear that teachers most often receive newsletters from the administration of their educational institutions (79.2% in 2023) and 74.9% (in 2024). Teachers also indicated that they found information on the website of the Ministry of Education (55.3% in 2023 and 44.4% in 2024). More teachers began to turn to social networks, which indicates an increase in the degree of communication between teachers. 52% of teachers in 2023 received news about new courses from social networks, and in 2024 the number increased to 54.5%.

The market for providing educational services to improve the professional level of teaching staff will continue to grow in 2024. This positive trend is significant despite wartime and existing restrictions, as it provides educators with the opportunity to choose from various online forms of professional development. This is evidenced by the respondents' answers regarding the services of which organisations (companies, institutions, institutions) they used during the last year to improve their professional level. Among such organisations, the institution of postgraduate pedagogical education - 93.0%; educational institution (university, institute, college, school) – 26.3%; public organisation – 15.2%; international organisation – 11.6%; commercial company – 7.2%; individuals – 4.1%.

In 2024, there was a significant increase in the demand for teacher training services from public organisations. The popularity rose from 10.9% in 2023 to 15.2% in 2024. This demonstrates the growing variety of online courses offered by these organisations for teachers.

Respondents identified the following among the main needs for professional development: improvement of the methodology of conducting online lessons - 36.5%; familiarization with new tools for conducting online lessons - 33.1%; improvement of the method of conducting online lessons - 33.1%; use of artificial intelligence - 29.9%;

courses for teachers of the New Ukrainian Age – 27.4%; practical help in mastering new tools - 24.2%; assessment tools in distance learning conditions - 19.9%; quick online consultations on the use of ICT - 15.3%; creating and maintaining your own blog - 14.1%; basics of programming - 11.3%; virtual educational environment - 11.3%, etc.

Starting in 2022, teachers in Ukraine will encounter new challenges due to the implementation of martial law. As per the survey 2024, for the second consecutive year, teachers have reported having to work with temporarily displaced children (IDPs - 82.4%). Additionally, 56.6% of respondents mentioned that they are working with Ukrainian children who have become refugees in other countries. This situation highlights the significant educational burden on both teachers and students, impacting their psychological and physical well-being and leading to educational setbacks and losses. That is why the teachers were asked if they had the opportunity to undergo advanced training on the stress resistance of themselves and their children in wartime conditions. Positive answers were given by 78.4% of respondents, while 19.4% did not have the opportunity to undergo such training, and 2.2% were in the process of training.

5 Conclusions

Given the situation in Ukraine today, distance and mixed learning formats will continue, which means the need for active use of ICT and strengthening of requirements for distance learning.

The online survey conducted on more than 26,227 teachers in all regions of Ukraine in 2024, showed that teachers need advanced training in digital skills, support from state authorities, and at the same time they need to share best practices in distance learning and the use of digital tools for organizing work in the classroom. The findings from the study can provide a basis for suggestions that aim to improve online learning and promote the development of educators in the field of utilizing digital tools and creating a digital learning environment in the context of the ongoing war in Ukraine.

Educational institutions must focus on providing online support to their teaching staff and students. They should establish communication channels to ensure seamless interaction during different modes of school functioning. Moreover, they should review the technical equipment, software, and information available in the digital environment. The institutions should also evaluate the opportunities accessible to students and parents, taking into account the specific conditions of the region and educational institution. Additionally, they should respond promptly to the needs of teachers and students while supporting teacher innovations.

Among the main recommendations for improving the situation of Ukrainian teachers, the role of postgraduate education institutions should be singled out. Such teacher training institutions should strengthen methodological support for online teacher training activities, in particular regarding the use of ICT and distance learning, informing about new online opportunities for teachers, advising them on distance learning. It is necessary to create "hot lines" to advise teachers on the use of ICT and to solve problems in this area, because there is no position on the staff schedule of schools to provide

technical support for distance learning. Special attention in these institutions should be paid to the development of digital competence of teachers.

In the post-graduate education and teacher training system, urgent short-term courses on the use of online tools for distance learning and on the development of digital competence should be created and implemented in each region in accordance with the Digital Competence Framework for Teachers (DigCompEdu). As the most effective forms of professional development, pedagogical workers indicated webinars, online courses and master classes, online conferences, online seminars and projects - this should be taken into account.

It is important to pay special attention to teachers who are teaching through remote education to children of internally displaced persons (IDPs) and refugees, as well as those who are teaching children from the occupied territories. In addition, children with special educational needs should not be left behind and inclusive education should be prioritized during difficult times in Ukraine. Local self-government bodies should also participate in addressing these issues.

References

1. On the introduction of amendments to Chapter X "Final and Transitional Provisions" of the Law of Ukraine "On Comprehensive General Secondary Education" regarding the regulation of certain issues of educational activity under martial law, <https://zakon.rada.gov.ua/laws/show/2315-20#Text>.
2. ITU, UNDP. 2023. SDG Digital Acceleration Agenda. International Telecommunication Union and United Nations Development Programme (2023).
3. French, D., Kotzé, L.J.: Sustainable Development Goals. Edward Elgar Publishing (2018).
4. Grigas, V., Mierzecka, A., Tomori, T., Koltay, T.: Secondary School Teachers' Attitudes to Information Literacy in Hungary, Lithuania and Poland. *Communications in Computer and Information Science*. 688–697 (2022). https://doi.org/10.1007/978-3-030-99885-1_57.
5. Guitert, M., Romeu, T., Baztán, P.: The digital competence framework for primary and secondary schools in Europe. *European Journal of Education*. 56, 133–149 (2020). <https://doi.org/10.1111/ejed.12430>.
6. Anis, M.: Teacher Professional Development in the Digital Age: Addressing the Evolving Needs Post-covid. *International Journal for Multidisciplinary Research*. 6, (2024). <https://doi.org/10.36948/ijfmr.2024.v06i01.12386>.
7. Parween, B.B.Dr.N., Dr. Shagufta, Swarnalatha, J. a. B.S.K., Dr.S.R.: Job Performance of College Teachers in Higher Education with Reference to ICT. *Journal of Informatics Education and Research*. 4, (2024). <https://doi.org/10.52783/jier.v4i2.834>.
8. Stutchbury, K., Ebubedike, M., Amos, S., Chamberlain, L.: Professional development in the digital age: supporting improvements in teacher education through MOOCs. *Open Learning*. 1–24 (2023). <https://doi.org/10.1080/02680513.2023.2195875>.
9. VUORIKARI, KLUZER, S., PUNIE, Y.: DigComp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes. Publications Office of the European Union (2022). <https://doi.org/10.2760/115376>.
10. Unlocking the power of teachers' digital competence: "Professional engagement in digital education," <https://academy.europa.eu/courses/unlocking-the-power-of-teachers-digital-competence-professional-engagement-in-digital-education>.

11. V. I. Kovalchuk and I. P. Vorotnykova, “MODELS OF THE USE OF DISTANCE LEARNING ELEMENTS IN SCHOOL”, ITLT, vol. 60, no. 4, pp. 58–76, Sep. 2017, doi: 10.33407/itlt.v60i4.1763.
12. Ovcharuk, O.: Attitude of Ukrainian Educators toward the Use of Digital Tools for Teaching and Professional Development: Survey Results. ICTERI Workshops. 746–755 (2020).
13. Ovcharuk, O., Ivaniuk, I., Burov, O., Marienko, M., Soroko, N., Gritsenchuk, O., Kravchyna, O.: The Practical Experience of the Use of Digital Learning Resources by Ukrainian Teachers to Ensure the Sustainable Development and Democratization of Education Process. (2020). <https://doi.org/10.5220/0010925000003364>.
14. Ovcharuk, O.V.: MONITORING THE READINESS OF TEACHERS TO USE DIGITAL MEANS DURING THE WAR IN UKRAINE. Information Technologies and Learning Tools. 98, 52–65 (2023). <https://doi.org/10.33407/itlt.v98i6.5478>.