



# Professional Development and Needs of Ukrainian Teachers in the Use of Digital Technologies: Survey Results

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**Abstract.** The widespread use of digital technologies by teachers today necessitates ongoing updates of knowledge and professional development. In Ukraine, where the education system has faced significant challenges, teachers play a crucial role in ensuring consistent student learning. Distance and blended learning models encourage educators to explore new opportunities and implement innovative teaching methods. This study aims to assess the need for integrating digital technologies and for professional development to achieve educational objectives. It examines the needs of Ukrainian teachers, with focused research conducted from 2022 to 2024, highlighting the evolving demand for professional growth in utilising digital technologies. An online survey was conducted in order to assess the needs of teachers, highlighting the most popular digital tools and resources they utilise in their daily practice. A significant portion of the survey focuses on the challenges that Ukrainian teachers face in the current crisis conditions. An analysis of the professional development needs of Ukrainian teachers underscores their engagement with digital technologies. The survey results offer valuable insights into the areas where support and resources are necessary to enhance their skills and effectiveness in integrating these technologies into their teaching practices. This article aims to identify teachers' needs and the challenges they encounter while using digital tools in their daily work. It also aims to highlight strategies for improving teachers' professional development and addressing the ongoing crisis.

**Keywords:** Teacher · Professional Development · Advanced Training · Digital Tools · Survey

## 1 Introduction

Over the last four years, Ukrainian teachers faced many challenges caused by the post-COVID period and ongoing military actions. These challenges are mostly related to the need to improve their mastery of conducting lessons in various formats, such as distance online or blended format, combined with traditional lessons. Teachers must deal with a significant amount of work and the constant need to adjust to new technologies and teaching methods due to the shift to distance and blended learning, and security concerns

during wartime. Additionally, students' low motivation caused educational gaps that influenced the whole educational process in general. As in other low-income countries, in Ukraine, teachers often experience stigmatisation due to the profession's perceived lack of prestige and importance, and insufficient qualifications to meet these challenges. All this creates a need for professional development for teachers, combined with the need to learn how to cope with stress and heavy workloads. In addition, despite declarative statements from the state about supporting teachers, in practice, the mechanisms of such support are not always perfect and effective.

Most requests for teacher professional development are related to the need to use digital tools for teaching and organising the digital educational environment in school. Rapid technological progress has expanded and provided opportunities to use a variety of digital tools, which at the same time have significantly influenced pedagogical methods and forms of teaching and learning. This need is evidenced by several studies conducted in recent years on the state of teachers' use of digital tools for teaching. On the other hand, the results of recent studies prove the decline in the quality of education of students in Ukraine. In particular, the latest international comparative study, PISA in 2022, showed that in the field of reading, 15-year-old Ukrainian students showed the greatest regression: Ukraine received 428 points, 38 points less compared to 2018. The test showed that 59% of students reached the basic level in reading. 66% of Ukrainian 15-year-old students achieved the basic level of literacy in science and mathematics. Ukraine received 450 points (19 less than in 2018) [1].

Organising the educational process through digital means requires teachers to have a foundational understanding of digital tools. These tools should enable them to present content and topics related to school subjects effectively. Additionally, teachers should master methods that facilitate feedback from students, gauge their activity and interest, and help develop students' competencies. In 2019, the Cabinet of Ministers of Ukraine adopted a Resolution allowing pedagogical workers to enhance their qualifications through various forms, including full-time, correspondence, distance, and online training. Key types of advanced training include programs, seminars, workshops, webinars, master classes, and internships [2].

## 2 Literature Review

The professional development of teachers in the sphere of the use of digital instruments is based on the new approaches to teaching with ICT. The schools in most European countries are equipped with the necessary tools, but there are challenges when teachers are not fast with the usage of the all potential of the tools and online instruments. In this respect, J.L. Sumile Jr, R.A. Lozano state that teachers today need to upskill in order to level up with the digital skills of their students. On the other hand, they state that the use of technologies enhances students' critical thinking and interaction between them [2]. According to F.Caena, C. Redecker, teachers need to update their competence profiles for 21<sup>st</sup>-century challenges. This can lead to changes in teaching strategies, along with the implementation of innovative pedagogies [3]. As it is mentioned by M.Fjærestad and C.Xenofontos, who investigate the effectiveness of the use of digital tools by primary school teachers of mathematics, it is important how the teachers perceive using these

tools. The researchers investigate how teachers use online platforms to create tasks, tests, presentations, and real-time collaboration between students. In this term, teachers evidenced that digital tools offer significant benefits for them: choice of the relevant platform or tool for organising creative lessons and proposing more possibilities to create and conduct tests, allowing them to reach all students through personalised assignments, simplifying administrative work and planning, etc. [5].

The latest studies state that the professional development of teachers is based on the constructivist theory, together with other (transformational leadership, adult learning, etc) [6]. This theory supposes that learners actively construct knowledge through their experiences and interactions, which is reasonable for teachers, who gain experience in using ICT tools for the preparation and conducting their lessons [7]. Therefore, based on the above, we lean towards the constructivist theory that teachers, each time they learn new digital tools and build a new digital environment for their students, learn new methods of using digital tools. This gives us a basis for conducting surveys of teachers to study their needs and motivations for professional development in the field of using digital tools in the future.

### **3 Research Methods**

In 2024, a survey of teachers' needs for the use of digital tools was conducted using Google Forms, employing statistical data processing methods to analyse the results. The survey gathered responses from a total of 26,223 participants from all over Ukraine. The questionnaire was shared through professional teacher networks, including social media platforms, to reach all regions of the country. To encourage honest responses, the authors ensured anonymity and maintained academic integrity. Additionally, the obtained results were compared with the findings of other studies of teachers conducted in the previous years (2022–2023) to provide an objective perspective.

### **4 Results of the Study**

To identify teachers' problems, they were asked about the three main obstacles they encounter when implementing distance and blended learning. 78% of those surveyed noted that these are unstable conditions for conducting classes (power outages, air raid alarms, Internet outages). 60% noted the lack of sufficient provision of necessary equipment for students. 32% noted a low level of self-organisation and motivation of students. 16% noted the increasing workload on teachers, and 14% reported the psychological distress of teachers. In 2023, respondents indicated that internet outages were 64.7%, which is lower than in 2024.

In 2023, 30% of teachers reported a lack of support from parents for students during distance learning. In 2024, this percentage decreased to 22% of teachers. This indicates an increase in the level of parental responsibility. Last year's survey of parents also confirmed that more than 50% still control the distance learning process of their children. Teacher surveys continue into 2025 [8].

A significant challenge for teachers is the lack of adequate equipment for both themselves and their students to facilitate remote learning. This situation largely depends

on the financial circumstances of families. For instance, in 2024, 56.8% of respondents reported insufficient provision of equipment for students, which is the same percentage as in 2023. This indicates a persistent problem regarding the availability of essential tools for students, impacting educational outcomes and highlighting a substantial gap in the ability to utilise learning instruments effectively.

In 2023, 25.9% of teachers reported that educational institutions lacked sufficient material and technical support. By 2024, this figure slightly decreased to 25.2%, suggesting that the situation remains stagnant and that schools are still not receiving the necessary equipment [9].

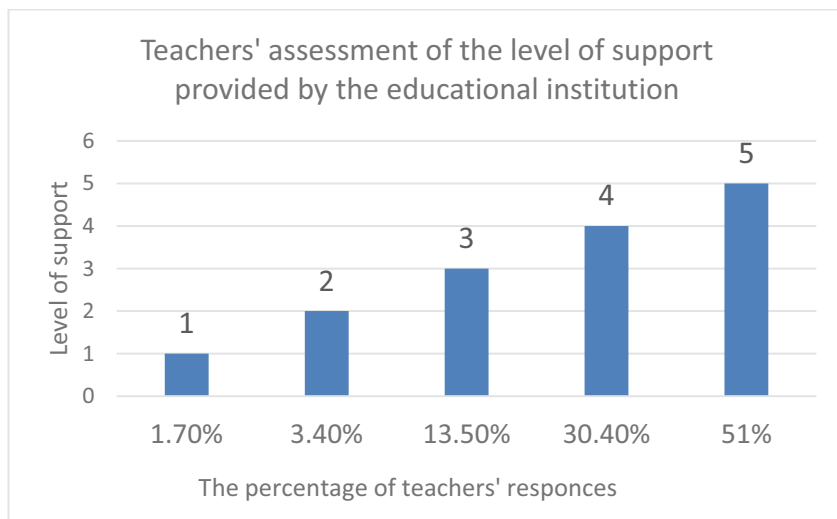
An important question posed to teachers was about the networks, platforms, or communities they use for professional communication and for connecting with students. This question has become particularly significant in the context of distance learning, where social networks and services have become the primary means of transferring information and facilitating exchanges between teachers and students. Teachers noted that they mainly use Viber (80%) and Facebook (55.4%), Telegram (45.6%), Messenger (23.5%), and Instagram (16.4%). In 2023, educators also used mainly Viber (77%) and Zoom (63.8%), which indicates the significant convenience and popularity of these tools, as well as their rapid adoption for educational purposes.

We also inquired whether teachers find the availability of online teaching materials adequate for preparing for distance learning. A significant 88.3% of teachers believe they have enough materials to conduct their classes, while 11.7% reported a lack of resources. Additionally, 76% of teachers stated that they are members of professional communities, whereas 23% indicated that they are not.

It was important to explore how teachers engage in professional exchanges with one another. The findings revealed that 68% of teachers participate in professional exchanges during advanced training, 66.4% do so within subject methodological associations, 60.5% engage at conferences and seminars, and 37% exchange experiences during open lessons. The teachers were asked to rate on a 5-point scale how much support they feel from their educational institution's administration, where 1 indicates low support and 5 indicates high support. The results of this assessment are presented below (see Fig. 1). The diagram shows that only half of the teachers feel fully supported by educational institutions. Additionally, 30.4% feel supported to a lesser degree. This highlights the need to enhance the capacity of educational institutions in this area.

The primary concern for teachers in 2024 was to identify their professional development needs. The following areas were highlighted: 36.5% expressed the need for training in creating and using educational videos, including recording and editing video lessons; 33% indicated a desire to learn about online tools that foster student creativity; Another 33% wanted to enhance their methodologies for conducting online lessons. Nearly 30% aimed to familiarise themselves with the specifics of using artificial intelligence in education. For 20%, it was essential to learn about online tools for assessing their students' academic achievements [9] (Fig. 1).

Teachers also emphasised the importance of studying the basics of programming and robotics, as well as virtual learning, access to online psychological support programs for teachers, students, and parents, and the use of tools and instruments for inclusive education.



**Fig. 1.** Teachers' assessment of the level of support provided by the educational institution during their organisation of distance learning in 2024.

We investigated the organisations that teachers turned to for enhancing their professional qualifications over the past year. Our findings showed that 92% of teachers improved their qualifications through postgraduate educational institutions. Additionally, 26.3% did so at universities and their organisations, while 15% advanced their skills through public organisations. Moreover, 11% enhanced their qualifications as part of international projects. Teachers consider online courses (69.8%) and online master classes (62.8%) to be the most effective forms of advanced training in distance education.

## 5 Conclusions

Thus, in the process of surveying teachers, aspects such as the problems faced by teachers when organising distance learning during wartime in Ukraine were investigated. The study identified several issues related to the use of digital technologies by teachers in Ukraine. The ongoing crisis caused by the war, along with limited opportunities for professional development and restrictions on the exchange of experiences, has hindered their ability to respond promptly to new challenges. Teachers also answered the questions of how they consider it convenient for them to improve their qualifications in the use of digital tools, which institutions organise this process. As can be seen from the answers received, teachers in Ukraine feel the need for constant support for their professional development from educational institutions. The issue of providing teachers with ICT resources, as well as students, remains insufficiently resolved. There are problems with psychological support for teachers.

In July 2024, the Ministry of Education and Science of Ukraine, in collaboration with the Ministry of Digitalisation, launched the “Offline School” program under the motto: “Returning Children to Offline Learning.” This comprehensive initiative aims

to ensure that children can return to safe, in-person learning. Where in-person learning is not feasible, the program seeks to establish conditions for high-quality and effective distance education [10].

In 2024, we can conclude that teachers are facing more problems compared to 2023. Teacher surveys continue into 2025. These issues stem from inadequate conditions for conducting lessons. This situation is prevalent not only in schools near military action but across the entire country. Teacher surveys continue into 2025.

Educators believe that practice is the most important factor in obtaining the necessary knowledge and skills to use digital tools for learning. The findings highlight the professional development needs of teachers in effectively utilising digital technologies and tools. Key areas for teachers' professional development include the following: the establishment of digital platforms that provide educational resources and free access to materials for teachers across various subjects; leveraging the potential of social networks for professional exchange; providing continuous methodological support to teachers in their workplaces; and updating professional development programs in the realm of digital technology use. These issues can also be addressed in further research.

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