The Use of Digital Tools for Training and Retraining of Education Professionals in the Context of the COVID-19 Pandemic

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Abstract

European Higher Education Area development, challenges of information civilization and the COVID-19 pandemic have highlighted the importance of digital tools for training and retraining of education professionals. Introducing these tools in educational process of formal and non-formal educational institutions served as an indicator of ICT problems for both educators and their students. It necessitated pedagogical research to identify attitude of educators and their experience in using digital tools in professional activities.

The article presents the results of empirical study of this problem and suggests recommendations for improving the use of digital tools for teaching and learning.

The empirical research involved conducting an e-survey of education professionals and analyzing educational activities of NGOs. The developed three questionnaires covered 37 questions in such areas as general information about the respondent, particular features of one's use of digital tools, types of digital tools implemented in educational institutions. The obtained data revealed the respondents' experience on the use of digital tools in distance learning; their assessment of prospects for digitalization of formal and non-formal education; readiness to master digital learning tools.

The analysis of educational organizations activities included: Internet access of educational process participants at workplace; use of digital tools in educational activities and professional development; introducing e-management systems for educational process arrangements; self-assessment of educators' digital competence level; their attitude to the use of digital tools for professional development and common educational activities.

Based on the research results methodological recommendations for professionals of formal and non-formal educational institutions are suggested.

Keywords

European Higher Education Area, digital tools, higher education, formal and non-formal education, education professionals.

1. Introduction

1.1. Statement of the problem

Digital transformation of social institutions and challenges of information civilization, exacerbated by the COVID-19 pandemic, highlight the need for digital tools in all areas of public practice, especially in education, as it is a field of social renewal and human capacity building impacting development of all other potentials in society. Forced by pandemic accelerated introduction of distance and blended learning in the educational process of formal and informal education served as an indicator for the problems educators and educational service seekers have in mastering digital tools. It revealed their

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demand for digital competence formation and acquiring some specialized digital skills. It highlighted the need for relevant methodological and technical support for distance educational process.

Acknowledging digitalization as one of the main factors of economic and social growth of states and improving the quality of human life in the information society gives digital tools priority in education. It is reflected in introducing SMART-specialization and Industry 4.0 approaches in educational programs, integrating both higher and non-formal educational institutions in local ecosystems and Industry 4.0 clusters by developing adaptive competency-oriented components of higher education, with regional specialization; introducing educational projects and individual educational programs.

Key objectives for digitalization of higher education in Ukraine are: to line it up with the needs of digital society, to join the European Higher Education Area (EHEA) and to provide continuing education based on the use of technologies of personalized advanced learning. In this context, mastering digital tools by HEIs lecturers and students will open new opportunities for applying student-centered approach.

In order to competently manage these processes and provide qualified pedagogical and methodological assistance in mastering digital tools for training and retraining among educators and educational services seekers of formal and non-formal educational institutions, it is necessary to conduct special pedagogical research on identifying attitudes and experience of educational professionals in using digital tools in learning and professional educational activities. This study was conducted by scientists of Institute of Higher Education of NAES of Ukraine and the State Institution of Higher Education "University of Educational Management" as well as educators of Children Mission NGO in 2021. Its objective was to identify the attitudes of teachers and students to the use of digital tools (including digital educational platforms, social media and various digital devices) in learning and professional development of educators in formal and non-formal education during the COVID-19 pandemic. This allowed to identify gaps in the content of training programs and increase the digital competence of educators. Based on research results, methodological recommendations were developed for HEIs and non-formal educational institutions on the use of digital tools in teaching subjects, organization of educational events and for professional development process.

1.2. Analysis of recent research and publications

The analysis of global and European educational documents in recent years shows that the content is centered around key topics like the impact of the Covid-19 pandemic on education systems in Europe [1], digitalization of education [2] and the use of digital tools for training and retraining of education professionals.

In particular, the Communication on the European Education Area by 2025, approved by the European Commission on September 30th, 2020, states that the Covid-19 pandemic has major impacts on education and training systems in Europe. It has exposed more than 100 million Europeans to new and challenging realities in ways of learning, teaching and communication [1, p. 1]. The key way to overcome this situation is seen in the introduction of people-centered policies to restore the viability of education and all its components, including non-formal learning [1, p. 1; 3]. The authors propose to consolidate efforts in six directions: quality, inclusiveness and gender equality, green and digital transformation, teachers and trainers, higher education and geopolitical dimension. In each direction, digital competences of a citizen is a key factor for success in professional development and access to opportunities for personal growth.

According to European educational documents [4, 5], self-isolation and social distancing, digital exclusion, precarious employment situations and a general feeling of uncertainty during the COVID-19 pandemic have created new barriers both for students in obtaining full educational services, and for providers of educational process in its planning and management.

In an effort to make education more accessible, training providers have been quick to digitize their resources and activities and to move all of their teaching online. At the same time, this has posed an enormous challenge for educators, of requiring not only a set of digital skills, but also reformatting education process. Delivering courses in an online environment has meant that educators have had to find ways of dealing with technical problems, ensuring equal participation and engagement while

acknowledging feelings of anxiety. At the same time, adult learning providers have had to rapidly reorganize their work and invest in e-learning platforms [4].

Communication with consumers of educational services has become both more urgent and difficult. The COVID-19 crisis has clearly shown [4] that the digital divide is a reality that has affected the quality of online education: many households inadequate internet connection, share one computer between several family members or have to rely on pay-to-go phone services. Inadequate digital skills have also kept many adults from taking up learning during the pandemic, such as the elderly whose lives were the ones most affected by the pandemic.

In recent years, international surveys on the accessibility of adult education have confirmed that three main barriers to participation include lack of time, lack of funding and lack of interest; in many cases, the COVID-19 crisis has only exacerbated each of these problems [4].

The Report on Implementation of Bologna Process in European Higher Education Area in 2020 states: "Digitalization plays an important role in all spheres of society, and we recognize its potential to change the way of higher education and training at different stages of people's lives. We call on our HEIs to equip their students and support their teachers for creative action in digital environment… The wave of progress in the use of digital technologies has been caused by the pandemic. However, in the future it is necessary to make a choice and address the issue of cultural adaptation. For example, what is the appropriate role of digital technologies?" [2].

A report by the International Council on Open and Distance Education (ICDE) 2020 states that 1.3 billion students from schools, colleges and universities in 195 countries in April 2020 received home schooling and distance learning, being imposed almost without warning to most educators. The move to home learning based on digital technologies has become a serious challenge for both students and teachers. In many cases, professional development was completely impossible [6].

On November 19, 2020, an online event dedicated to the development of the Bologna Process took place - EHEA Rome 2020 Ministerial Conference "Embrace the challenge, create new opportunities and cancel differences" [7]. The Rome Communiqué has been adopted setting out indicators and vectors for the entire European Higher Education Area (EHEA) for the next ten years, stating that higher education will be a key factor in achieving the UN Sustainable Development Goals (SDGs) by 2030. Emphasis is placed on the need to "support HEIs in the use of digital technologies for teaching, learning and assessment, for academic communication and research, to invest in the development of digital skills and competencies for all" [8, 9].

The final document of Innovation in Higher Education Conference, held by European Association of Distance Teaching Universities (EADTU) on October 28-30, 2020, is vital for problem research on using digital tools for training and retraining of educational professionals in the context of the COVID-19 pandemic. The main conclusion of the document is that digital education should create a European Educational Area in accordance with the Bologna Declaration and support cooperation and mobility within EHEA. It will contribute to changes in lifelong learning growing in importance for society as careers become longer and retraining is needed to innovate and create an inclusive society [10].

In Ukraine, variety of measures for the development of digital competencies of the population has been approved at the legislative level [11-14]. Research on the use of distance learning technologies in the conditions of nationwide quarantine was conducted by the State Education Quality Service of Ukraine among participants of education process [15]. According to the results of the survey, recommendations were formed to ensure the quality of education during distance learning in quarantine times [16]. Ukrainian scientists have initiated a number of reaserch projects on digitalization of education in the context of the coronavirus pandemic. Thus, the need for the use of digital tools for distance learning of Ukrainian GSE educators during the COVID-19 period was addressed by I.V. Ivaniuk [17] and O.V. Ovcharuk [18].

However, despite the considerable interest and some achievements of Ukrainian scientists in researching various aspects of the problem of digitalization of education, the features and challenges of using digital tools in higher and non-formal education systems are still insufficiently studied.

1.3. The purpose of the article

The purpose of the article is a comparative analysis of challenges, achievements and attitudes of entities of higher and non-formal education to the use of digital tools for learning and professional development and developing guidelines for improving this process in HEIs and non-formal educational institutions.

2. Research Methods

In our research we used analysis of scientific sources, global, European and local educational documents; comparative analysis of Ukrainian and foreign experience in using digital tools in higher and non-formal education systems of Ukraine; pedagogical observation; questionnaires and surveys; statistical methods of information processing.

The attitude of educators to the introduction of distance learning in HEIs and educational FBOs was studied on the basis of an open questions survey. Online questionnaires were developed in Google Forms based on the experience of international organizations, including EHEA, EADTU, OECD, ICDE, UNESCO, World Bank, as well as local documents, such as “Concepts for the Development of Digital Competencies and Approval of an Action Plan” [11, 19].

3. Research Results

In 2021 an empirical research was conducted by scientists of Institute of Higher Education of NAES of Ukraine and the State Institution of Higher Education "University of Educational Management" as well as educators of Children Mission NGO aiming to identify educators’ and learners’ level of ownership and use of digital tools for training and retraining at formal and informal educational institutions. Its three stages included Google Forms surveys of education professionals and an analysis of educational activities of HEIs and faith-based NGOs. The research was conducted as part of "Theoretical foundations and mechanisms for the development of scientific and pedagogical potential of Ukrainian universities in the context of expanding institutional autonomy" (РК № 0120U100266) and "Transformation of professional development of teachers and research and teaching staff in an open university of postgraduate education" Research Project (state registration number РК № 0120U104637). 458 respondents were involved (259 - on the first stage, 100 - on the second, 99 - on the third), all responses were anonymous.

The survey objective was to identify the attitude of both HEIs lecturers and students, as well as educators of non-formal educational institutions to the use of digital tools in the process of learning and professional development in formal and non-formal education during the period of the COVID-19 pandemic. To reach the objective, three Google Forms questionnaires have been developed. The first of them, "Evaluation of the Effectiveness of Open Learning in Educational Institutions" [20], covered 17 questions, the second one, "The Use of Digital Tools for Training and Retraining of Education Professionals during the COVID-19 Pandemic" [21], and the third one, "Using Digital Tools for Advanced Training of NGOs’ Education Professionals during the COVID-19 Pandemic" [22], covered 10 questions each.

The surveys were designed of three parts: general information about the respondent; information on specific features of using digital tools; information on the types and kinds of digital tools implemented in educational institutions.

3.1. Survey 1 "Evaluation of the Effectiveness of Open Learning in Educational Institutions"

The first stage of the empirical study was aimed at identifying the conditions for the organization of distance learning and the attitude of educators to the use of digital tools in educational institutions during the coronavirus pandemic [20].

The survey reached 259 respondents; all responses were anonymous.

During the survey respondents answered 17 questions. By answering the questions of the first part the questionnaire, respondents indicated general information about themselves as entities of education activity.

The answers to the questions about the type of professional activity and position of the respondents were distributed as follows: school administration - 22.3%, teachers - 20.5%, education workers - 16.1%, methodologists - 14.3 %, college administration - 11.6%, heads - 9.8%, students - 2.7%, advanced training teachers - 1.8%, research and teaching staff - 0.9%.

When asked about belonging to a certain age category, the answers of the respondents were the following: the majority of respondents were 50-55 years - 20%, 35-40 years - 13.7%, 40-45 years - 13.7%, 45-50 years - 12.7%, 55-60 years - 11.8%, 30-35 years - 10.9%, 18-22 years - 8.2%. Fewer respondents were aged 60-65 years - 3.6%, 65-70 years - 2.7%, 25-30 years - 1.8%, 23-25 years - 0.9%.

When asked about the form of professional development during the COVID-19 pandemic, the answers of the respondents were distributed as follows: distant - 59.8%, online - 34.6%, in person - 5.6%. When asked about Internet access, the answers of the respondents were following: at home - 44%, at work - 56%.

When asked about the region of Ukraine where the respondents are from, the answers showed that the survey was attended by educators from 16 regions of the country, namely: Vinnytsia - 35.9%, Lviv - 17.1%, Kyiv - 12%, Odessa - 8%, Cherkasy - 8.4%, Mykolayiv - 7.2%, Khmelnytsky - 3.2%, Dnipropetrovsk - 1.2%, Poltava - 1.5%, Volyn - 1.5%, Donetsk - 1.2 %, Kharkiv - 0.8%, Chernivtsi - 0.8%, Ivano-Frankivsk - 0.4%, Ternopil - 0.4%, Zhytomyr - 0.4%.

Responses to the questions about the educational institution or NGO where the respondents work or study were distributed as follows: employees of secondary schools (Levels I-III) - 43.2%, vocational schools - 18.5%, colleges - 13.9%, employees of HEIs - 13.7%, employees of secondary schools (Levels - I-II) - 6.7%, students, post-graduate students - 2.8%, employees of scientific institutions - 0.4%, representatives of the public sector - 0.4%, graduates of educational institutions - 0.4%.

The second part of the questionnaire addressed specific features of respondents' use of digital tools. Thus, when asked about the amount of time that the subjects of educational process are able to set apart for individual learning, the answers of the respondents were distributed as follows: 20 minutes - 6%, 45 minutes - 37.2%, 60 minutes - 56.8%.

To the question about the possibility of pedagogical and scientific-pedagogical workers living in a city for distance learning, the respondents' responses were distributed as follows: yes – 88.1%, not always – 11.5%, no – 0.4%. The same question to educators living in a village or a district center showed following responses: yes - 36.1%, not always - 59.9%, no - 4%.

The respondents' answers on the types of social networks used for advanced adult training and education of schoolchildren and students are summarized in Table 1.

Table 1

Use of social networks for advanced adult training and education of schoolchildren and students

Social Network Name	Category of Respondents		
	Adults	Schoolchildren	Students
Google Site	77%	68.7%	74.2%
Facebook	52.8%	30.6%	36.1%
Instagram	16.7%	24.2%	26.6%
Telegram	26.2%	29.8%	34.1%
Tik Tok	3.2%	13.9%	34%
Padlet	21%	21.4%	24.2%
Skype	52.4%	44.8%	55.6%

To the question about following sanitary rules and regulations on the continuous duration of educational activities with technical means of training the respondents' 79.9% answered "yes", 18.1% – "not always", 2% – "no".

When asked about digital tools used in the communication process, the respondents' answers were distributed as follows: online communication - 83.3%; video viewing - 82.9%; tests - 80.9%; self-created presentations - 78.1%; working with educational material - 59.4%; working with the textbook

- 56.2%; use of borrowed presentations with indication of authorship - 45.8%; problem solving - 41%; conducting lessons by a teacher using a board - 27.1%; Learningapps - 23.5%; Padlet board - 16.7%; Classtime - 16.3%.

The third part of the questionnaire revealed types and kinds of digital tools implemented in educational institutions (open educational and research platforms; databases and information and communication technologies for open learning and research).

When asked about open learning and research platforms implemented in educational institution, the respondents indicated that such platforms are preferred: Classroom, Moodle, ZOOM, Google Meet, ClassDojo, Microsoft Teams, electronic diary E-schools, Workspace, YouTube, Skype, Hangouts Meet, Microsoft Office 365, "My School", "Education", "Lesson", Kahoot.

When asked about databases and ICT for open learning and research implemented in their educational institutions, the answers of the respondents indicate that they do not fully possess this information. When asked to suggest for future seminars, the answers of the respondents were distributed as follows: the use of distance learning technologies to develop interest in the study of disciplines; effective methods of language management in education; the use of modern communication tools for the comfortable transition of participants in the educational process to learning and teaching; organization of electronic document management in the educational institution; organization of distance learning; the latest distance learning technologies; world practical experience in organizing the distance educational process in universities; feedback from students; use of social networks in education.

Summarizing the results of the 1st stage of our research, we can draw the following conclusions:

- the transition to the distance form of education became a test for all subjects of educational activity, as the COVID-19 pandemic significantly changed the conditions of educational activities and forced it mainly to the distance format (94.4%); only 5.6% of subjects of educational activity receive contact education;
- at the same time, this process was not provided with sufficient resources (especially in rural areas) and appropriate conditions were not created for organizing educational process in a new format: only a little more than half of educational organizations (56%) are able to provide quality Internet access, but 44% of participants of educational process have Internet access from a home computer; at the same time, the majority of respondents have a permanent opportunity to do so (88.1%), but 11.5% do not always have such an opportunity, and 0.4% are completely deprived of it. Educators living in district centers or rural areas experiencing more difficulties in distance learning: 59.9% can not always participate, 4% - can not at all participate and only 36.1% can consistently obtain educational services in distant format;
- the amount of time allotted for the same process ranges from 20 minutes per day (6%) to 60 minutes (56.8%); 37.2% of respondents spend 45 minutes a day on educational activities; at the same time, the majority of respondents always comply with sanitary requirements 79.9%, while 18.1% - do not always comply and 2% do not comply at all;
- distance learning format, on one hand, became an obstacle to its effectiveness due to unequal access to network resources and digital tools, but, on the other hand, created more comfortable conditions for education at home and saved time-on-the-road to educational institution and back.

Thus, the effectiveness of distance education, in fact, depends on the ability of educators to self-organize their activities and motivation to carry it out, even under adverse conditions. The desire to increase the efficiency of educational activities and ensure the proper quality of education encourages participants of educational process to master digital educational tools.

3.2. Survey 2 "The Use of Digital Tools for Training and Retraining of Education Professionals during the COVID-19 Pandemic"

The second stage of the empirical research was aimed at identifying specific features of the use of digital tools for training and retraining of education professionals in the context of the COVID-19 pandemic [21]. The survey reached 100 respondents; all responses were anonymous. During the survey respondents answered 10 questions on gender; age category; digital tools used for professional training

of HEIs students; digital tools used in HEIs for advanced training of education professionals; position/status; social networks and educational opportunities used for training of HEIs students and advanced training of adults in the system of open education; location (according to the region of Ukraine); forms of education offered by HEIs to students for mastering and using digital tools; educational institutions where educators took advanced training on the use of digital tools, etc.

When asked about digital tools used for professional training of HEIs students, the answers of the respondents were distributed as follows: ZOOM - 98%, Skype - 77.8%, GoogleClassroom - 67.7%, Microsoft Teams - 32.3%, Coggle – 16.2%, GoogleHangouts - 9.1%, CiscoWebEx - 5.1%, Canva - 4%, Quizlet - 3%, FreeConferenceCall.com - 2%, Kahoot - 2%, XMind - 1%, Asana - 0%, Trello - 0%, Visme - 0%.

When asked about digital tools used in HEIs for advanced training of education professionals, the answers of the respondents were distributed as follows: ZOOM - 92.6%, Skype - 66.3%, GoogleClassroom - 54.7%, Microsoft Teams – 33.7%, Coggle - 15.8%, CiscoWebEx - 5.3%, Kahoot - 5.3%, GoogleHangouts - 4.2%, FreeConferenceCall.com - 3.2%, Quizlet - 3.2%, Canva - 2.1%, XMind - 1.1%, Asana - 0%, Trello - 0%, Visme - 0%.

When asked about the position/status of survey participants, their responses were distributed as follows: student(s) - 79%, research and teaching staff - 19%, teaching staff - 2%.

When asked about social networks and educational opportunities used for advanced training of adults in the system of open education, the answers (multiple choice) of the respondents were distributed as follows: Telegram - 72%, Skype - 58%, Facebook - 56%, Instagram - 45%, GoogleSite - 32%, TickTok - 6%, Padlet - 5% (Fig. 1).

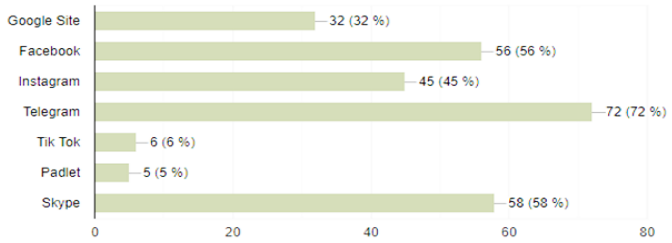

Figure 1: Survey results of respondents on social networks and educational opportunities used for advanced training of adults in the system of open education

When asked about social networks and educational opportunities used for training of HEIs students in the system of open education, the answers (multiple choice) of the respondents were distributed as follows: Telegram - 78%, Skype - 58%, Instagram - 45%, Facebook - 30%, GoogleSite - 29%, TickTok - 15%, Padlet - 3% (Fig. 2).

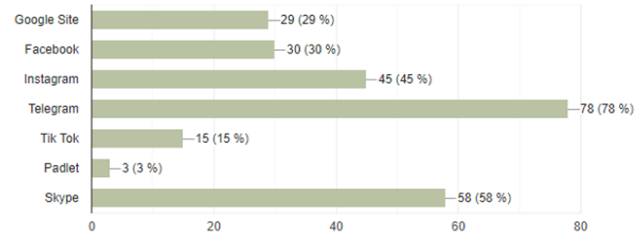

Figure 2: Survey results of respondents on social networks and educational opportunities used for training of HEIs students in the system of open education

To the questions about the forms of education offered by HEIs to students for mastering and using digital tools, the respondents' answers were distributed as follows: 67.3% study individually, 70.4% - during practicums, 37.8% - during conducted trainings, 32.7% - at conducted webinars.

When asked about educational institutions where the respondents took advanced training on the use of digital tools, the answers of the respondents were distributed in favor of the following institutions:

SIHE "University of Education Management", Cherkasy State Technological University, Regional Institutes of Postgraduate Pedagogical Education, foreign educational institutions, etc.

Generalization of the results of the 2nd stage of our research showed that:

- main digital tools used by distance learning entities are ZOOM - 98%, Skype - 77.8%, Google Classroom - 67.7%, Microsoft Teams - 32.3%. Less commonly used are Coogle - 16.2%, Google Hangouts - 9.1%, CiscoWebEx - 5.1%, Canva - 4%, Quizlet - 3%, FreeConferenceCall.com - 2%, Kahoot - 2%, XMind - 1%;
- in the process of advanced training HEI educators mainly use ZOOM - 92.6%, Skype - 66.3%, Google Classroom - 54.7%, Microsoft Teams - 33.7%. Coggle is less commonly used - 15.8%, CiscoWebEx - 5.3%, Kahoot - 5.3%, Google Hangouts - 4.2%, FreeConferenceCall.com - 3.2%, Quizlet - 3.2%, Canva – 2.1%, XMind - 1.1%; the most popular social media used by educators are Telegram and Skype, the least used are TikTok and Padlet;
- HEIs help students and lecturers in mastering and use of digital tools in educational activities by conducting practicums - 70.4%, trainings - 37.8%, webinars - 32.7%. This is combined with individual mastering of digital tools - 67.3%.

Thus, the participants of HEI educational process have an average level of mastery of digital tools and feel the need for methodological assistance and recommendations for organizing work in online format and the use of digital tools in their educational activities. At the same time, local HEIs are not fully able to meet this need and are aimed at providing it.

3.3. Survey 3 "Using Digital Tools for Advanced Training of NGOs' Education Professionals during the COVID-19 Pandemic"

The third questionnaire was aimed at identifying the most methodologically effective digital tools, that, according to NGOs' educators, should be used in conducting classes with children in the system of non-formal education and assessing their own level of ownership of various digital tools compared to the level at the beginning of the quarantine [22].

Within a month after introduction of the first quarantine restrictions, Children Mission NGO held a webinar for educators involved in non-formal education of children (volunteers, church ministers, staff members of various NGOs and charitable foundations) on "Serving Children during Quarantine Time". 99 participants from 5 countries (90% - from Ukraine) attended it. Participants represented 15 of the 25 regions of Ukraine. The most represented were Dnipropetrovsk region (24 participants), Kyiv region (21 participants) and Donetsk region (15 participants).

The webinar was held on the Zoom platform. We discovered that only 1% of participants (10 people) in the first quarantine month (before participating in the webinar) held meetings with children online using either Zoom or Skype. The analysis of the needs of the participants was based on the following question: "What digital tools, in your opinion, are the most methodologically effective in conducting training sessions with children in the system of non-formal education?" In 2020 respondents' answers to this question (multiple choice) were distributed as follows: video recording of lessons - 41%, various digital tasks and challenges - 31%, conducting meetings with children via Zoom - 27.6%, other answers did not contain any names of digital tools; 41% of respondents said that they were administrating groups in social networks to keep in touch with children and their parents (Table 2).

Table 2

Use of digital tools in the educational activities of NGOs

Digital Tools	Year	
	2020	2021
Video Recording of Lessons	41 %	12.5 %
Various Digital Tasks and Challenges	31 %	37.5 %
Conducting Meetings with Children via Zoom	27.6 %	45.8 %
Groups in Social Networks	41 %	45.8 %

Based on received data, the content of the webinar on advancing digital competence of non-formal educators was developed. This content was structured in the following blocks: introducing digital platforms for short weekly meetings with children; using social networks for learning and communication; practical recommendations on features of gaming technologies digital tools for online trainings.

Data from questionnaire 3 shows a significant increase in the level of mastering digital skills. For example, when answering the question "How would you assess your level of ownership of various digital tools compared to the level at the beginning of quarantine in March 2020?" 55% of respondents rated it as high; 30% of respondents – as average; 15% of respondents - as low.

Summarized results of the 3rd survey showed that in the conditions of quarantine restrictions and in the post-pandemic world, faith-based NGOs face challenges that largely coincide with the challenges of the entire education system: low access of adult students to gadgets and/or low Internet access as well as low level of ICT competencies of students; revisiting the content and forms of non-formal education in terms of distance and blended learning; increasing the ICT competencies of andragogy trainers and resolving key contradictions - how to prepare an adult student for offline activities and communication by means of digital learning tools.

In addition, team meetings were held to provide emotional support to teams of educators: NGO “International Leadership and Development Centre” - once a month; Children Mission NGO - once a week during the period of strict quarantine, then - once a month; Association of Christian Camps used communication exercises in the process of preparing online events (on the Zoom and my.conference.com platforms). Social networks for communication and resources of informal education for subscribers were promoted resulting in an increase of subscribers in all NGOs during the quarantine.

The Zoom platform was used by the Association of Christian Camps NGO, whose trainers in the framework of two annual conferences (May and November 2020) held 150 webinars lasting 1.5 hours each, that were attended by 10,071 people. Among them: unique users - 4500 people, i.e. many participants attended educational events of this NGO several times. It should be noted that although the platform my.conference.com. is still little known among NGOs of non-formal pedagogical education, this tool was actively used by the NGO "International Leadership and Development Center". Children Mission has developed an online educational program (60 academic hours) and conducted a training course with an experimental group on platforms - Zoom and YouTube; organizational and tutoring support of students was carried out using Viber group. Children Mission also launched weekly informal meetings called "Tea with Children Mission" on Fridays to discuss pressing topics on non-formal education of children, Christian ethics (from December 2021 – via Zoom with a live broadcast on Facebook, from January 2021 - with a broadcast on YouTube). Videos are stored on Children Mission YouTube channel. 18 meetings were held, 14 broadcasts were given indicating that the NGO educators gradually mastered the available digital tools.

International Charity Fund "The ABC’s of Life" was searching for a digital tool for the Exhibition "Equipping Children Workers", but all available options were quite expensive, so the annual exhibition was postponed from October 2020 to March 2021.

Generalization of the results of the 3rd stage of our research showed that:

- digital tools are used by NGOs’ educators for various educational purposes (as a means of non-formal education of children, as a means of training educators working with children in non-formal education, and as a means of advanced training and organizational development);
- during the quarantine period, the educational activities of faith-based NGOs included mainly such digital tools as video recording of lessons, various digital tasks and challenges, conducting meetings with children via Zoom, groups in social networks. At the same time, positive dynamics is observed in the use of such digital tools as conducting classes-meetings with children via Zoom (45.8% in 2021 compared to 27.6% in 2020) and groups in social networks (45.8% in 2021 compared to 41% in 2020). Educators of FBOs experience some difficulties in using digital tools, which are due to the insufficient level of formation of digital skills as an integral part of pedagogical competence;

- in order to increase the level of pedagogical competence, in particular, some of its components related to the use of digital skills, educators of faith-based NGOs feel the urgent need for webinars, trainings, receiving professional guidelines and systematic advisory support.

4. Conclusions and Recommendations

Generalization of the results of our research led us to the following conclusions:

1. The COVID-19 pandemic has created the conditions for the rapid development of digital tools for training and retraining of education professionals. In this regard, the following measures are important: 1) formation and improvement of information and digital competence in the system of formal and non-formal education; 2) upgrading and strengthening the content of educational programs in the system of professional training and advanced training of educators (including introducing content modules on topical issues of mastering virtual educational environments, their use for one's own professional activities, digital content creation, etc.); 3) development of IT infrastructure of institutions, development and implementation of quality electronic learning tools (electronic textbooks, video content, online tests, etc.); 4) expanding the tool box of digital technologies in order to form sustainable skills to solve problems of professional, educational and domestic nature.
2. Transition to distance education as a result of the COVID-19 pandemic has become a challenge for local education in all its parts and has put entities of educational activities on the spot to accelerate the transition to online learning and mastering digital tools. At the same time, entities of educational activity praised the more comfortable conditions for its implementation distantly. They found didactic and methodological opportunities to organize the educational process in such a way as to maintain its efficiency and ensure the quality of educational services. Therefore, the attitude of entities of educational activity to open education depends on their operational conditions, the technical security of this process, the mastery level of digital tools of professional and advanced training; ability to self-organize their activities and motivation to carry it out. The desire to increase educational activities efficiency and ensure the proper quality of education encourages participants of educational process to master digital educational tools.
3. Main digital tools used in the process of professional and advanced training in the conditions of distance education are such platforms as Zoom, Skype, Google Classroom, Microsoft Teams. These tools had been already widespread in the educational community and adult learners have already developed certain skills to use them, while such digital tools as CiscoWebEx, Kahoot, GoogleHangouts, FreeConferenceCall.com, Quizlet, Canva and XMind are still new and many distance learners do not have the skills to use them. HEIs help students and lecturers in mastering and using digital tools in educational activities, but this is never enough since digital tools are constantly updated.
4. In the context of non-formal adult education, digital tools are used by educators for various educational purposes (as a means of non-formal education of children, as a means of training educators working with children in non-formal education, and as a means of advanced training and organizational development). The most common tool is the Zoom platform (45.8%). There is a positive trend in assessing one's own level of ownership of various digital instruments compared to the level at the beginning of quarantine by NGOs' educators. More than half (55% of respondents) significantly improved their level during the pandemic.

The scientific novelty of our research is to identify gaps in the use of ICT in the professional activities of educators and their professional development. The research methods enabled us to collect data on the level of education professionals in using digital tools and on their attitude to online training.

The practical significance of the research is to provide recommendations for advanced training of educators in using digital tools for training and professional development. In particular, the following resources are suggested for use: web resources for teaching educational courses, web-browsers, web-based distance learning environment at educational institution, web-based resource management

software as well as free cloud storage to access work materials and official documents of the institution in shared folders, such as School in the Cloud, Diary, Microsoft Office 365 and Drop Box.

Educators should also pay attention to international digital education platforms that they can use for their own practical work. Among them: plus.etwinning.net (https://www.etwinning.net/en/pub/index.htm) - a platform for educators that unites Ukrainian teachers today; schoolsonline.britishcouncil.org (https://www.britishcouncil.org/school-resources#main-content) - the British Council website containing teaching materials and resources for teachers; EPals.com (https://www.epals.com/#/connections) - The EPals Global Community is a place where students connect; knowmyworld.org (https://knowmyworld.org) offers webinars for teachers to share experiences; www.penpalschools.com, www.leraar24.nl, www.surfspace.nl - platforms for networking with European educators; and mass open online courses.

We suggest using online self-assessment tools to measure one's level of digital competence, in particular: Internet barometer of skills of cooperation with the use of cloud services, MENTEP TET-SAT tool (http://mentep.eun.org). It is important to consider the Digital Competence System for Educators (DigCompEdu) and the Digital Competence System for Citizens (DigComp) containing specific descriptors of 8 skill levels and descriptions of the digital competence components.

The following methods of assessing digital competence are offered: continuous assessment; a team working with educational managers and methodologists; self-assessment; a team working with colleagues to assess achievements; development of individual work plans; providing possibilities to observe lessons of qualified colleagues; conducting regular analysis of problems, surveys; creating a portfolio (in particular, an e-portfolio); conducting research and monitoring the effectiveness of activities. Assessment of digital skills of educators can be held in the form of exams, testing, monitoring the learning process, etc.

The results of our surveys conducted in 2021 can be useful for local curriculum developers and those practitioners who plan to use digital tools in the learning process. Our research show that educators' attitude to the use of digital tools for their professional development differs depending on Internet access, their competence and motivation. These three factors must be addressed in the system of professional development of education professionals in Ukraine.

Further research can be aimed at a comparative analysis of European and local experience in the use of digital tools for distance training of education professionals. Particular attention needs to be paid to the use of digital tools to assess the digital competence of lecturers and students. Modern science requires a wider development of comparative and empirical research in the field of developing the ability of educators to use ICT. This can help educators to build up digital didactic environment for their subject areas, enrich their professional experience and achieve a high level of professional development and self-content.

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