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Developing digital competence of teachers of Humanitarian disciplines in the conditions of COVID-19 quarantine measures

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Abstract. The relevance of the research is explained by the necessity of developing digital competence of teachers of Humanitarian disciplines at the higher education institutions (HEIs) in the conditions of the quarantine measures to prevent the spread of COVID-19. It is particularly challenging for teachers of Humanitarian disciplines, who are not specialists in the digital sphere as their profession is focused on humans. The purpose of the paper is to define the influence of the quarantine on the work of teachers at HEIs, revealing the level of the development, challenges and peculiarities of enhancing the digital competence of teachers of Humanitarian disciplines, theirs needs in education and giving recommendations how to arrange education and make administrative decisions. The methods of the research are survey, theoretical analysis, others. The results are to define the peculiarities of the influence of the quarantine on the arrangement of distance learning, the peculiarities of developing digital competence of teachers during the quarantine, their needs in education, the challenges in conducting mass distance learning, the determined complex of scientific approaches to developing digital competence. The practical significance of the research refers to developing three internship programs, based on the results of diagnosing teachers' digital competence.

1. Introduction

Coronavirus pandemic and quarantine measures turn to be challenging for the work of many specialists in different spheres. The digital education using digital technologies (DTs) becomes the basis for higher education institutions (HEIs). At the same time, there is no theory of digital education (DE) at HEIs for mass distance learning (DL) in pedagogy that makes it difficult for both teachers and administrative staff to arrange DL and to make conditions for students' learning and teachers' work. It is the most difficult issue for the teachers of Humanitarian disciplines, as its full implementation during the

quarantine is challenging, a lot of problems arise, people learn while working. The reasons for this are the following:

1. The teachers of Humanitarian disciplines at higher education institutions aren't the specialists in DE and DL. Humanitarian disciplines are aimed at studying humans, their cultural, creative, and spiritual activities [26]. In Ukraine, the subject area "Humanities" includes such specialities as religious studies, history, archeology, philosophy, culture studies, and philology [28]. Teachers of Humanitarian disciplines provide the general humanitarian component of curricular of training future specialists of different professions. Their main work tool is a word, not a digit. And the professional focus of teachers of Humanitarian disciplines is on a human, but not on nature, a digit, technics, etc. That is why to quickly master the professional activities based on technics and digits tools to change and reorient a personality's professional focus. This does not happen all at once, DTs are new for them. So, the problem of developing digital competence of teachers of Humanitarian disciplines in the sphere of using DTs in education arises.

2. There are persons among the teachers of education institutions who are of different ages and have different levels of training – computer devices were different in different years and different generations were taught differently. HEIs didn't arrange the systematic further training of teachers for improving teachers' digital competence (TDC [21]), as the practice put the different tasks – transition to the competence-based approach in higher education, entering the EU, the new requirements of HEIs accreditation, etc. Currently, this problem is urgent and massive. There is a need to improve teachers' qualifications in the sphere of DE and DL, in particular, it concerns teachers of Humanitarian disciplines. But these needs are different, taking into account teachers' professional training. Their training should be conducted differently. So, scientists should define what and how to study them.

3. Teachers of Humanitarian disciplines should have not only digital literacy but also digital competence for solving professional problems in the conditions of the quarantine and mass DL. This requires defining the essence of the influence of the quarantine measures on DL, digital technologies, and professional activities of teachers of Humanitarian disciplines.

4. In the system of distance education, there is a bigger number of learning process participants. They are A) Student; B) Tutor (teacher); C) Organizer; D) Administrator. In education using DT, all the subjects should learn how to interact with one another and share time and duties. They are new conditions for the realization of the educational process for teachers and students, all the participants should be trained to be ready for it. This is a scientific problem of the informatisation of education and the implementation of digital technologies for arranging mass distance learning at HEIs. Its solution contributes to the improvement of higher education quality and the development of a sustainable society in Ukraine.

We have analysed the regulatory documents of the Ministry of Education and Science of Ukraine on distance education and digital education, the experience of Ukraine and EU in the issue, as well theoretical researches: 1. Regulatory documents of the Ministry of Education and Science of Ukraine, the Laws of Ukraine on Higher Education concerning DE (the Law of Ukraine "On Higher Education", the Law of Ukraine "On National Program of Informatization", the Order of the Ministry of Education and Science of Ukraine "On Approval of the Provisions for Distance Learning", the Order of the Ministry of Education and Science of Ukraine "Requirements for Institutions of Higher Education and Institutions for Postgraduate Education, Scientific, Academic Institutions Providing Educational Services in the Distance Form of Education on Training and Professional Development on the Accredited Fields and Specialties". They legitimize distance education and present the tools in recommendations. Before the quarantine, distance education at higher education institutions was considered to be "an opportunity to study and get necessary knowledge remotely from an education institution at any convenient time" [14]. At the same time "The Regulations on Distance Learning" and "The Concept of Distance Learning Development in Ukraine" regulate the rights and obligations of learning process participants. "Learning process must be built on the use of different communication tools" [13]. In these Regulations on Distance Learning, they say that "individualized process of getting knowledge, skills, abilities, and ways of human cognitive activity which occurs mainly by indirect

interaction of distant learning process which functionates based on modern psychological-pedagogical and information-communication technologies" [13]. Learning is a component of education that is why psychological-pedagogical and information-communication technologies are also necessary for distance education. It's a new direction of further training of HEIs teachers that has not been developed for teachers of Humanitarian disciplines before. It's about distance technologies in education which are certain platforms and services for organizing and conducting distance learning (for example, Moodle [18], Google Workspace [2], etc. [37]) that allow students and teachers to communicate and realize the learning process with all its phases. These distance technologies, depending on the countries, universities, and academic disciplines, can be integrated at any stage of academic course. This means that mass DL in Ukraine can be introduced at any time in the middle of the academic year because of the quarantine measures. Distance education is a form of education that is equal to full-time, evening, part-time education and externship which is mainly realized due to distance learning technologies. Thus, DL has a legal framework for functioning, including the quarantine period, and allows students to get the diploma. It is only necessary to correctly arrange the learning process in the quarantine conditions when digital learning becomes the basis for distance one [14]. This brings up the question about teachers' readiness to use DL in quarantine conditions. We should emphasise that The first distance education course in the modern sense was provided by Sir Isaac Pitman in the 1840s, who taught a system of shorthand by mailing texts transcribed into shorthand on postcards and receiving transcriptions from his students in return for correction [43]. In 1856 Charles Toussaint and Gustav Langenscheidt started teaching language in the extramural form in Germany [9]. The advantage of distance learning is its accessibility for people all over the world.

During the quarantine, the Ministry of Education and Science of Ukraine has organized several events to help to implement the distance education in HEIs. We list them and analyse their content:

– At the site of the Ministry of Education and Science of Ukraine, there is a list of HEIs which gave the opportunity to study remotely before the quarantine, had the right to do it, and gained certain experience in such a type of education [14]. These HEIs provide educational services in a distance form and can share their experience. Also, they have an experience of implementing the distance technologies in the educational process (blended learning, "Face-to-face Driver"), which allows to combine in-class and electronic learning and to introduce the supplements for in-class learning and students' independent activities [36]. They can be preconditions of DL but they cannot continue to the same extent in the conditions of the quarantine. There is a necessity to arrange the mass DL at HEIs.

– The Ministry of Education and Science of Ukraine and the Committee on Digital Transformation in Ukraine have given the list of services for arranging distance learning only for secondary school teachers [30]. But their content doesn't regard to the teachers of Humanitarian disciplines at HEIs. However, some digital tools for carrying out DL can be useful. In May 2020, Ukraine became one of the first of three countries where there is the global learning online-platform (UNICEF, Microsoft, and Cambridge University). It offers access to learning and didactic resources, developed for the learning process participants in conditions of COVID-19 pandemic [16].

– The Ministry of Education and Science of Ukraine created a site "Teach and Learn in the Quarantine: Changes in Education System". But this site doesn't give instructions for HEIs teachers how to arrange DL. It foresees that HEIs teachers have a certain level of digital competence development. At the same time, HEIs in Ukraine have academic autonomy in the issues of what platforms and Internet-resources to use for implementing distance learning, but every student has to complete an individual curriculum for this academic year [17]. The Ministry of Education and Science of Ukraine published the recommendations "On organizing current, semester control and certification of students with the use of distance technologies" [15], according to which the same tool for control should be used. The question arises on how to do it if there is no high-quality Internet connection in small towns and villages in Ukraine, students and teachers have no devices for DL. So, there is a need to use different platforms, tools and communication means for DL.

Thus, in Ukraine the first opportunities are created and the state informational and organizational support for HEIs is given for implementing of digital technologies during the quarantine. And the

theories and methods of implementing digital education with the use of DT, which includes all the stages of learning process and takes into account peculiarities of activities of teachers of different specialities, including teachers of Humanitarian disciplines, haven't not been developed in Ukraine and the world yet, this is the issue of autonomous HEIs. The administrative staff of the HEIs should provide conditions for training teachers to work in distance education in the conditions of quarantine measures for realization of the right for students to get higher education. This is a new issue that requires defining the needs of teachers in education, in particular, teachers of Humanitarian disciplines. This is what prompted us to this study. Also, the Ministry of Education and Science of Ukraine doesn't instruct university teachers how to use DT. At the same time EU are solving this problem. The foreign learning platforms are iLearn, Coursera, Coursera for Campus and others. Famous world universities have given the free access to their courses. All the universities have given the access to their libraries and platforms, some platforms for distance education are developed in certain countries and even at universities [29]. However, it's important to know the foreign language to use them. So, in France HEIs "turn to more intensive use of their shared digital environment, make them available to students where the course materials are materialized" [25]. Poland has turned all HEIs to distance education, whose main feature is the compulsory dialogue between a teacher and students. At Adam Mickiewicz University the free course "The use of information and communication technologies in teachers' work" has been developed for distance learning in the quarantine conditions. At Tallinn University there is a series of seminars "Expert on the air" [29]. Thus, HEIs teachers in the quarantine conditions need technical support, technical devices, and digital tools in digital education, teacher training how to use them, pedagogical dialogue communication for better learning of the material by students, combining the efforts and creating various conditions for distance education.

In Ukraine there is also a certain experience in training teachers of Humanitarian disciplines at HEIs, using distance technologies. All the HEIs have trained teachers how to develop materials for distance learning, to work with different digital services and platforms, and to conduct an examination in a distance form. So, at Ternopil Volodymyr Hnatiuk National Pedagogical University the center of digital education is functioning which develops and implements learning courses, devoted to the methods of developing an electronic course in the system Moodle, revealing the basis of developing electronic courses for the system of managing the learning resources Moodle, using communication tools, and distance learning technologies etc. Three online seminars have been carried out for teachers: "Using activity-based components in distance learning and online communication of Moodle system". The second online seminar has continued the topic with such issues: 1. Control of knowledge using tests in Moodle (Recourse Test). Editing, developing, and uploading test tasks in Moodle system. 2. Digital tools for communication in the process of distance learning (interactive online boards, Google documents, a platform for conducting online classes). The third seminar has the topic "Tools of the service BigBlueButton for conducting online classes" (the seminar is for those who are planning to use the software BigBlueButton in distance learning). We should emphasise that the events with such content have been carried out in many universities with about the same number. During the quarantine the workers of the distance education center give the online assistance to teachers, groups at social networking sites have been created: the group of Distance Education Center of Ternopil Volodymyr Hnatiuk National Pedagogical University is functioning in the messenger Viber whose participants are the university teachers. Similar groups are also created at the university faculties and departments. All of them are aimed at direct work of the university teachers in the quarantine conditions ([38], [39]). However, the peculiarities of the training and activities of teachers of Humanitarian disciplines haven't taken into consideration yet, the training and instructions are the same for teachers of different specialities. It influences the quality of education process.

Thus, we can reveal the presence of the following contradictions in the theory and practice of education: between new requirements to carry out the mass distance learning and teachers' experience in this work; between the present information resources in the world and in the country and the lack of development of teachers' digital competence for using them in DL; the necessity to train teachers to arrange DL and the lack of researches in the conditions of the quarantine that concern the arrangement

of this learning. The basis for solving these contradictions is thought to be teachers' digital competence which is complex and unstudied for making administrative decisions on the ways of its mass development. Especially it concerns teachers of Humanitarian disciplines whose professional focus is on a human but not on technics.

Taking into account what is said above, the chosen theme of the research is considered to be relevant for improving the quality of education and ensuring its continuity in the conditions of quarantine and pandemic using DTs. DTs are considered to be a new sphere for teachers that involves their implementation in the conditions of the quarantine without having previous systematic training.

It concerns all the university teachers of Humanitarian disciplines at HEIs of Ukraine. The purpose of the paper is to define the impact of the quarantine on the implementation of distance learning in the work of teachers of Humanitarian disciplines at HEIs, the level of their digital competence and to give recommendations on how to improve its level. The studied issue concerns all the teachers of Humanitarian disciplines at HEIs of Ukraine, who work in the same conditions during the quarantine. Thus, the purpose of the paper is to define the impact of the quarantine on the implementation of distance learning in teachers' activities at HEIs, as well as the level, challenges, and peculiarities of the development of digital competence of teachers of Humanitarian disciplines, their needs in education, and to give recommendations on how to improve the level of digital competence.

2. Methodology

The methodology includes the defining of theoretical research framework, the choice of methods of studying teachers' digital competence, and research basis. Distance education is a certain type of education that is carried out using distance technologies. In 2014, as a part of the strategy Education and Training (ET) 2020 European Commission introduced a wider term – "digital and online education" (DOE). Respectively digital education is the form of teaching and learning by the use of ICT that has a lot of formats and hybrid methods, including the use of locally set up software. Online education is a prevailing form of distance learning, being realized mainly via the Internet, and implying the use of social networking sites and services Web 2.0 for shared and personalized learning using desktop computers or mobile devices at any time and from anywhere in the world. Open learning resources can also be used in it [5]. That means the terms "digital and online education", "electronic education" and "digital education" are used as synonyms. The research of arranging the digital learning in the quarantine conditions due to a coronavirus pandemic becomes important for us ([4], [8], [10], [19], [20]), as it reveals the effective digital tools, means, and technologies of the work with students, the opportunities of Moodle platform for implementing the competence-based approach in future engineers' training (this platform is the basis for Ukrainian HEIs in the quarantine conditions), it has been revealed that the following facts are important for distance learning in the quarantine conditions: 1) modern distance education at HEIs should be electronic with the elements of electronic education which is a kind of distance education; 2) mobile learning [10]. Mobile learning is defined as a type of distance learning and electronic learning, this is an educational technology, which is based on the intensive use of modern mobile devices and technologies, gives new opportunities for teaching those students who live in isolation or in remote places or has learning difficulties [36]. Nowadays there is no unified theory of distance education in the world that is essential for developing TDC and the successful use of these tools in education. For effective distance education, the digital literacy of population and the digital competence of a specialist of the certain sphere are necessary. This is discussed in the European Framework for the Digital Competence of Educators, which contains 22 digital competences, grouped into 6 blocks. We take them into consideration in our research as a modern framework for arranging distance education, using distance technologies ([3], [4]). That is why it is necessary to know the level of teachers' digital competence and methods of its measuring. Thus, it is essential to know the essence of the term "teachers' digital competence", its possible level of the development, and methods of measuring. Analysing the term "teachers' digital competence", we take into account its various definitions. So, Nataliia V. Morze et al. [22] assert that "educators' digital competence is a complex dynamic holistic integrative formation of a personality that is his/her multilevel professional and

personal characteristic in the sphere of digital technologies and experience to use them, which is caused by needs and requirements of digital society, as well as by the emergence of digital learning environment that changes educational interaction of all the participants of learning process and is characterised by the wide use of the Internet, digital systems of data storing, initial data systematization, and automated digital analytical systems (based on neural networks and artificial intelligence), as well as it allows to do professional activities and requires (perhaps, stimulates or needs) constant professional self-development" [22]. This definition takes into consideration the modern experience of the EU and orientation on teachers' constant professional self-development that are important for arranging DL in the conditions of the quarantine. There is the single definition of digital competence for secondary school teachers and HEIs teachers that considers "it as the system of applied knowledge, skills, and targets which give an opportunity to arrange all the stages of educational activities and to improve the education quality, based on the opportunities that are given by digital technologies (individualization of learning, technical solution of creative tasks, interactive project work, etc.)" [1]. The same for all the definitions is direction of all the teachers to arranging the learning based on the digital framework and using digital technologies. These definitions can be supplemented by the understanding of teachers' digital competence given by Garry Falloon [6]. According to his definition, teachers' digital competence must include skills which are necessary for productive, safe, and ethical functioning in various digital environment. Thus, teachers' digital competence is described as a list of skills and their functions in modern digital educational process that must correspond to the problems of digital and human society, educational needs of teachers and students. We focus on defining what teachers of Humanitarian disciplines need in the conditions of quarantine measures for preventing the spread of COVID-19. That is why the list of skills, included in teachers' digital competence, which is described in detail in the literary sources mentioned above, becomes the basis for our research. These skills are the same for teachers of all disciplines and we don't focus on finding out the frequency of their use by teachers of different disciplines. We use it for teachers of Humanitarian disciplines.

The methods in our research are the following: survey of the teachers of Humanitarian disciplines using questionnaires, theoretical analysis of the sources, observation, conversations with teachers, and methods of mathematical statistics. We have defined the level of the development of TDC and the reasons which influence the implementation of DE in the quarantine conditions. The written survey was developed for HEIs teachers. The survey questions are based on the competence-based, andragogic, pragmatic, and activity-based approaches to distance education, as they reflect the features of teaching activities in the quarantine conditions. 222 teachers of Humanitarian disciplines took part in the survey, 61 teachers of them were from H. S. Skovoroda Kharkiv National Pedagogical University (SKhNPU), 66 teachers were from Khmelnytskyi Institute of Social Technologies of Higher Education Institution "Open International University of Human Development "Ukraine" (KhIST), and 95 teachers were from Donbass State Pedagogical University (DSPU). These HEIs were chosen as Khmelnitsky Institute of Social Technologies was the best university according to the level of distance education in the system of universities "Ukraine". This was the HEI that started the first the distance education with the students with special needs. DSPU was the HEI that was situated near the zone of the military conflict in the east of Ukraine. At this university there were the students who did not live in Ukraine, so they needed distance learning. SKhNPU was chosen as the national pedagogical university in Ukraine that was situated in a peaceful area and had the opportunities to implement all the innovations and provides quality education using distance technologies. All the teachers of Humanitarian disciplines at these HEIs were proposed to anonymously take part in the survey, 77 – 89% of all the teachers who worked at these HEIs answered the survey questions. The purpose of the survey was to find out who of the teachers of Humanitarian disciplines needed the further training for carrying out the professional activities using distance technologies, what the disadvantages were, and what should be involved into the content of their learning. The survey had the monitoring nature for improving the quality of learning process and was developed in accordance with the regulations on inner monitoring of education quality (as required by National Agency of Higher Education Quality to the accreditation of HEI, the Law on Higher Education), which had the same content in three higher education institutions. The survey had 2 blocks.

The first block was about the training and the work of teachers during the quarantine. This survey included closed and semi-closed questions; in some questions several answers should be chosen. As this wasn't the survey for studying the personal qualities and psychological characteristics of teachers, it didn't contain the lie scale. The second part of the survey included questions of the ready-made survey, tested in the Russian Federation within the EU project on defining the digital competence of HEI teachers [1].

We developed and asked such questions of the first block in the survey for the teachers of Humanitarian disciplines at HEI:

1. What is the higher education institution where you work?

2. Did you have the experience in online teaching and digital teaching of the students before the quarantine?

3. Could you conduct online and digital education before the quarantine? Yes; no; to a limited extent.

4. Have you been trained in digital and online education before? Yes; no.

5. How did you master digital competence essential for online and digital education before the quarantine? The course of further training; self-education via the Internet; consultations with colleagues; online webinars; private lessons; I didn't concern about it before the quarantine; others.

6. What or who encouraged and motivated you for mastering digital competence? The leadership of educational institution motivated financially; the leadership of educational institution motivated morally and psychologically; self-motivation and self-stimulation; it was interesting to learn and use something new in the work; I want to catch up with students; shared work with colleagues; the desire to be a modern teacher etc.

7. How did you master digital competences during the quarantine? Self-development via the Internet; consultation with colleagues; online webinars; online courses of further training; there was no need; others.

8. What difficulties did you face up to while organizing online and digital training? The lack of time; the lack of economic and material resources at home; the lack of technical facilities at home; the lack of teachers' digital competences; the lack of students' digital competence; no desire to work in digital education; there are no conditions and place to work at home; the absence of conditions in the country for developing digital education.

9. Which online forms/ways do you use for communicating with your students and colleagues?

Before the quarantine (BQ)	During the quarantine (DQ)
Telephone calls	Telephone calls
Calls and chats via messengers	Calls and chats via messengers
Online consultations	Online consultations
Online lectures	Online lectures
Online seminars	Online seminars
Online department meeting	Online department meeting
Online journal	Online journal
Online rectorate, online faculty meeting, online department meeting	Online rectorate, online faculty meeting, online department meeting
Online defense of course works	Online defense of course works
Online academic council meeting	Online academic council meeting
Online examinations, credits	Online examinations, credits
Others	Others

10. Which other digital tools have you used in your pedagogical activities? (you can choose some of them):

Before the quarantine	During the quarantine
Presentations	Presentations
Watching video/ Listening to the audio	Watching video/ Listening to the audio
Computer tests/ quizzes	Computer tests/ quizzes

Digital posters   Digital posters
Mind maps   Mind maps
Blogs and wiki   Blogs and wiki
Interactive tables   Interactive tables
Interactive posters   Interactive posters
Virtual tours   Virtual tours
Virtual laboratories   Virtual laboratories
Others   Others
I haven't used any digital tools yet   I haven't used any digital tools yet
11. How much time have you spent to prepare for classes?
Before the quarantine   During the quarantine
Less than 1 hour on a lecture   Less than 1 hour on a lecture
Less than 0.5 hour on a seminar   Less than 0.5 hour on a seminar
More than 1 hour on a lecture   More than 1 hour on a lecture
More than 0.5 hour on a seminar   More than 0.5 hour on a seminar

The analysis of various methods of measuring the level of digital competence has revealed that Galina U. Soldatova's method [33], who first developed it, is the most interesting and modern, but it is applicable to schoolchildren. That is why we measured the index of ICT competence – the integrative indicator that describes the teachers' readiness to actively use ICT in educational process [1]. The index of teachers' digital competence was studied, based on six levels which were defined in the research in the Russian Federation. All the survey questions were developed on the basis of European Digital Competence Framework 2.0 for educators (DigCompEdu [4], [40]) and adapted by Analytical Center applied in education system of the Russian Federation [1]: A1 – Newcomer, A2 – Explorer, B1 – Integrator, B2 – Expert, C1 – Leader, C2 – Pioneer. The index of ICT and the index of teachers' digital competence were considered as synonymous definitions. As the basis for the survey was European Framework, we used it for conducting the survey of teachers of Humanitarian disciplines for defining their level of digital competence in the context of Ukrainian orientation to European integration, the reformation of the education system, and the common roots of education in Ukraine and the Russian Federation [1]. So, we describe them:

A1 Newcomer. Teachers should develop their skills to use digital technologies in educational process. It is necessary to improve educational process, to support these improvements in a new term and to gradually increase the competence level in the field of digital technology.

A2 Explorer. Teachers are aware of the fact that digital technologies have a high potential and want to master them for using in their professional activities. They start occasionally using digital technologies in classes.

B1 Integrator. Teachers try using digital technologies in different contexts and for different purposes, implementing them in their teaching practice. They use DTs creatively, trying to improve their professional skills and to expand the scope of digital technologies.

B2 Expert. Teachers use a great number of digital technologies confidently, creatively, and critically in their professional activities. They select digital technologies purposefully and try to comprehend the advantages and disadvantages of different digital strategies. They are open to new ideas and understand there are digital technologies which they haven't applied yet and which they can implement in their teaching practice. Trying, they upgrade, structure, and improve their set of strategies.

C1 Leader. Teachers develop consistent and complex approach to using digital technologies in teaching practice. They have a certain number of digital strategies and are knowledgeable about the most suitable strategy for the certain situation. Teachers always think about enhancing their practical skills. They always know about innovations as they share experience with experts and are always ready to help colleagues – to teach them to use digital technologies in educational process and to explain them what the benefits of digital technologies in educational process are.

C2 Pioneer. Teachers question the adequacy of modern teaching practice, using both innovative decisions and traditional methods. They think about restrictions and disadvantages of modern educational process and try to improve it. Teachers-innovators try using highly innovative and challenging digital technologies and develop new pedagogical approaches. They are also guides to innovations and role models for other educators [1].

The methods include assigning points on the scale. Taking into account the points assigned, each respondent was assigned to one of 6 groups [1].

3. Research results and discussion

We conducted the survey among the teachers of Humanitarian disciplines at three higher education institutions: SKhNPU, KhIST, and DSPU. Its results are presented in tables 1, 2, 3. Tables 2, 3 BQ indicate the data before quarantine, and DQ has data during quarantine.

Table 1. The results of the survey of the teachers on implementing distance education in the quarantine conditions.

	SKhNPU	KhIST	DSPU
2. Your scientific and pedagogical experience			
3-10 years	53%	18,2%	2,6%
10-20 years	26,7%	63,6%	7,9%
more than 20 years	20,3 %	18,2 %	89,5 %
3. Your age			
under 30	33,3%	0 %	18,4%
30-39	26,7%	63,6%	51,8%
40-49	26,7%	36,4%	14,9%
50-59	6,7%	0 %	12,3%
60 and over	6,7%	0 %	2,6 %
4. Did you have the experience of online and digital education before the quarantine?			
Yes	60%	91%	84,2%
No	40%	9%	15,8%
5. Could you implement online and digital education before the quarantine?			
To limited extend	60%	27,3%	32,5%
No	13,3%	0 %	5,3%
Yes	26,7%	72,7%	62,3%
6. Have you been trained in online and digital education before?			
Yes	73,3%	72,7%	68,4%
No	26,7%	27,3%	31,6%
7. How did you master digital competences during the quarantine?			
Online webinars	6,7%	45,5%	22,8%
Self-education via the Internet	80%	81,8%	46,5%
Courses of further training	26,7%	18,2%	22,8%
Consultations with colleagues	46,7%	90,9%	42,9%
Private lessons	6,7%	0%	0%
Studying the subject, distance education	6,7%	0%	0%
8. What or who encouraged and motivated you for mastering digital competence? (you can choose some answers)			
self-motivation and self-stimulation	80%	63,6%	21%
it was interesting to learn and use something new in the work	60%	36,4%	5,3%
the leadership of educational institution motivated morally and psychologically	13,3%	54,5%	51%
the leadership of educational institution motivated financially	0 %	18,2%	2%
The conditions of the accreditation	0,8%	1,5 %	1,8%
9. How did you master digital competences during the quarantine?			
Self-education via the Internet	100 %	81,8 %	60,5%
Consultation with colleagues	66,7 %	72,7 %	37,7%
Online webinars	33,3 %	36,4 %	24,6%

	SKhNPU	KhIST	DSPU
Private lessons	6,7 %	0 %	0%
There was no need	0	18,2 %	5,3%
10. What difficulties did you face up to while organizing online and digital training?			
The lack of time	53 %	27,3 %	31,6%
The lack of economic and material resources at home	26,7 %	0%	15,8%
The lack of technical facilities at home	20 %	18,2 %	15,8%
The imperfection of teachers' digital competences	33,3%	0%	11,4%
The imperfection of students' digital competence	13,3 %	45,5%	15,5%
There are no conditions and place to work at home	40%	18,2%	3,5%
The absence of conditions in the country for developing digital education	20,3 %	9%	8,8%
No desire to work in digital education	0 %	0%	4,8 %

11. Which online forms/ways do you use for communicating with your students and colleagues?

	BQ	DQ	BQ	DQ	BQ	DQ
Telephone calls	73%	46,7 %	91%	72,7%	74,6%	74,6%
Calls via messengers	66,7%	53,3%	81,8 %	91%	77%	77%
Online consultations	26,7%	80%	54,5 %	100%	3,5%	85,1%
Online lectures	60,7%	100%	27,3%	100%	12,3%	70,2%
Online seminars	60,7%	100%	18,2 %	100 %	3,5%	100%
Online department meetings, exams, and course works	60,7%	100%	18,2 %	91 %	3,5%	100%

12. Which other digital tools have you used in your pedagogical activities? (you can choose some of them)

	BQ	DQ	BQ	DQ	BQ	DQ
Presentations	80%	46,7%	90,9%	81,8%	66,7%	53,5%
Audio/video	60%	60%	63,6%	100%	53,5%	53,5%
Computer tests	40%	73%	81,8%	100%	54,4%	57,9%
Mind maps	53%	53%	45,5%	63,6%	6,1%	26,3%
Blogs	40%	67%	45,5%	72,7%	25,8%	57,8%
Interactive posters	40%	67%	27,3%	81,8%	9,6%	50%
Virtual tours	33%	73%	45,5%	72,7%	9,6%	50%
Virtual laboratories	13,3%	93%	45,5%	81,8%	9,6%	0%
Haven't used yet	80%	20%	36,4%	72,7%	0%	0%
Others	33%	73%	81,8%	27,3%	0%	0%

13. How much time have you spent to prepare for classes?

	BQ	DQ	BQ	DQ	BQ	DQ
Less than 1 hour on a lecture	40%	33,3 %	45,5%	27,3%	38,6%	57%
More than 1 hour on a lecture	60%	66,7%	54,5%	72,7%	61,4%	43 %
More than 0,5 hour on a seminar	40%	60%	45,5%	45,5%	26,3%	18,4%
Less than 0,5 hour on a seminar	60%	40%	54,5%	54,5%	73,7%	81,6%

Table 2. Calculations of the index of digital competence of teachers of Humanitarian disciplines (methods [22]).

|	SKhNPU (61)		KhIST (66)		DSPU (95)	
0–19 group A1 Newcomer	0%	0%	0%	0%	0%	0%
20–33 group A2 Explorer	23,5%	14%	9,0 %	6%	11,8%	11%
34–49 group B1 Integrator	23,5%	14%	54,5%	36%	64,7%	61%
50–65 group B2 Expert	53 %	33%	18,2%	12%	17,7%	17%
66–80 group C1 Leader	0%	0%	18,3%	12%	5,8%	6%
81–88 group C2 Pioneer	0%	0%	0%	0%	0%	0%

The analysis of the results (table 1) has revealed that the same number of teachers at SKhNPU and KhIST have work experience more than 20 years (20,3% and 18,2%), whereas at DSPU the number of teachers who have work experience more than 20 years is 89,5%. KhIST takes the first place, where the

number of teachers with work experience between 10 and 20 years is 63,3%, SKhNPU takes the second place (26,7%), DSPU takes the third one (7,9%). The number of teachers with work experience less than 10 years is the biggest at SKhNPU (53%), at KhIST (18,2%), at DSPU 2,6%. These figures correlate with the age of teachers of Humanitarian disciplines. The biggest number of teachers who are under 30 is at SKhNPU (33,3%), at KhIST (18,4%), at DSPU 0%. The teachers of Humanitarian disciplines who are between 30 and 39 most work at KhIST (63,6%), at DSPU (51,8%), SKhNPU (26,7%). The teachers of KhIST (36,4%), SKhNPU (26,7%), and DSPU (14,9%) are between 40 and 49. The teachers between 50 and 60 work at DSPU (12,3%), SKhNPU (6,7%), KhIST (0%). The teachers of Humanitarian disciplines at SKhNPU and DSPU (6,7% and 2,6%) are over 60, KhIST has no teachers of this age group. These figures prove that DSPU and SKhNPU have teachers of Humanitarian disciplines who are older than those at KhIST. This proves that they learned at school and university without studying computer sciences which developed skills to conduct lifelong self-education and digital competences, to find information on the Internet. Whereas KhIST has a staff of mostly young teachers, who are energetic and since the childhood have been learning, using different gadgets, and learn systematically computer sciences; they used the knowledge gained in everyday life. So, they have certain digital literacy. There are many young teachers who have work experience at SKhNPU. They also have an opportunity to more easily take up online digital education in the quarantine conditions. At KhIST the teachers work who are mostly between 30 and 50. They have a significant difference in previous training that concerns digital competences which depends upon the development of the Internet and learning gadgets. Thus, Humanitarian disciplines are mainly taught by young teachers at SKhNPU and by experienced teachers at DSPU and KhIST. At the same time, before the quarantine 91% of teachers at KhIST, 84,2% of teachers at DSPU, and 60% at SKhNPU had the experience of teaching in online and digital environment.

It was found out that the age isn't defining condition to master digital competences. The work experience has also an influence on it. At the same time 72,7% of teachers of KhIST, 62,3% of DSPU, 26,7% of SKhNPU can implement distance education and confidently say 'yes'. The young teachers are unconfident in their TDC. However, the distance education was implemented mainly at KhIST, where a lot of students with special needs and military workers study who cannot always be physically present at classes. We also can assert that the young age and skills to work with gadgets do not include all the components of TDC, they need not only digital literacy, but also teachers' digital competence. We have studied if the teachers have been trained how to teach in distance education before (tables 1 and 3). So, 73,3 % – SKhNPU, 72,7 % – KhIST, 68,4% – DSPU were trained in distance education before the quarantine. If we look at such a training in accordance with the teachers' age (table 3), we can see that 100% of teachers at SKhNPU, who are under 30, between 50 and 59, and over 60, 50% of the teachers, who are between 30 and 39, and 60% of teachers, who are between 40 and 49, were trained (before the quarantine) in digital and online education. That means that young teachers are taught digital competences, but there is an urgent need to develop pedagogical digital competences for successful distance education. So, at SKhNPU the teachers who are between 30 and 50 are less taught, but more than half of them have such a special training. DSPU and KhIST haven't established such a training for young teachers who are under 30, relying on their digital literacy, at KhIST there isn't any training for teachers who are over 50 and 60. Special attention at KhIST is paid to the teachers who are between 30 and 39 (85,7%), between 40 and 49 (50%). More than half of the teachers at DSPU who are between 30 and 60 have passed themselves such training, this mainly concerns the persons who are older than 40. These teachers have well-developed professional competences, work experience, but they lack teacher digital competences (TDC).

Questions 7 and 9 explain how the teachers of Humanitarian disciplines have mastered TDC before the quarantine and during it. It's interesting that before the quarantine the teachers improved their professional level of TDC through the self-educating activities on the Internet (80% of teachers at SKhNPU, 81,8% of teachers at KhIST, 46,5% of teachers at DSPU). The second place takes consultations with colleagues – 90,9% at KhIST, 46,7% at SKhNPU, 42,9% at DSPU. So, the teachers didn't need specially organized training for their work, they successfully dealt with those competences

they had before. 45,5% of teachers at KhIST, 22,8% at DSPU improve their level of TDC via online webinars. Less than quarter of teachers at all the HEIs need the courses of further training: 26,7% of teachers at SKhNPU, 18,2% of teachers at KhIST, 22,8% of teachers at DSPU. They are mainly persons who are over 40. That means that they are aware of the lack of their TDC and consciously continued studying. The rest of the ways of improving the level of TDC get equally about 6,7%. They are private lessons and distance education. So, before the mass transition to distance education, the teachers worked, having such a level of the competence that they had, that was sufficient to do their everyday teaching activities. The teachers who are over 40 need specially organized training. Thus, the age and the previous ICT training influence the development of TDC of teachers of Humanitarian disciplines. They have an opportunity to improve their level of TDC via different forms od further training, including formal, informal and non-formal education. However, it is the most difficult to work in distance education for young teachers who are under 30 who don't have pedagogical professional competence. Teachers who are over 40 need the further training in developing TDC if they have pedagogical competences. We look into other reasons that affect the successful development of distance education at HEI. The answers to question 8 reveal them. The greatest work to motivate its staff has been done by the leadership of KhIST, there are all possible types of motivation and stimulation and the teachers are also very aware. The teachers of SKhNPU appear to be the most aware of self-education (80%) who are little stimulated psychologically and morally and who aren't financially stimulated at all. At DSPU the leadership's moral and psychological stimulation (51%) has the greatest influence, some of the teachers (21%) have self-motivation and self-stimulation, however, they are not interested in every issue for using it in their professional activities (5,3%), but they are sure they need them in everyday life. Whereas the teacher of Humanitarian disciplines at SKhNPU (60%) and KhIST (36,4%) have an interest and ability to use something new in their work. This can be explained by their young age, not long work experience, and the habit of working with gadgets. Thus, financial, moral, and psychological stimulations have an influence on the development of TDC, as well as self-motivation and self-stimulation do. The total quarantine in the world and in Ukraine because of coronavirus pandemic and transition of Ukrainian HEIs to the distance education causes the necessity to master TDC by the teachers of Humanitarian disciplines. All the teachers understand that it is the only way of preserving the workplace and salary. There are no persons who don't want to master TDC in all HEIs that are crucial for conducting professional activities. We also revealed the difficulties in mastering TDC during the quarantine learning according to their age (question 10). The similar answer of all the teachers is that they lack time. The preparation to the exams takes more time (question 1). But teachers at KhIST, SKhNPU and DSPU spend less time on getting ready to the seminars. Whereas the teachers at DSPU spend less time on lectures. If we consider the influence of the age on the preparing for lectures, we can see that the teachers who are over 40 and 50 spend more time on preparation for lectures than in other age groups, excluding young teachers who are under 30 and read little. It proves the necessity to master new forms of distance education and new tools by teachers, as well as to have time for doing this. At the same time according to the rate of difficulties of mastering TDC for implementing distance education in the quarantine conditions, the absence of place and conditions to study at home (especially in Kharkiv) takes the next place, the further difficulty is the lack of economic and material resources. They not always have a free computer when the children are learning at home. Not everyone has high speed Internet connection, a free room where a teacher can give lectures and communicate with students for hours. The teachers of all the HEIs which take part in the survey complain about the absence of the conditions in the country for implementing distance education. Some students are not registered in Moodle, some of them don't have Internet connection as they live in villages and small towns. The low level of the development of TDC is a challenge for the teachers of SKhNPU, to a lesser extent for the teachers at DSPU. At the same time the teachers of DSPU, SKhNPU and KhIST pay attention to the fact that the students' digital competence is insufficiently developed and foreign students don't have access to distance education because of their countries (China, Turkmenistan). That is why it is impossible to implement distance education with them. We compare difficulties in distance education: imperfection of TDC and imperfection of students' digital competence (figure 1, figure 2).
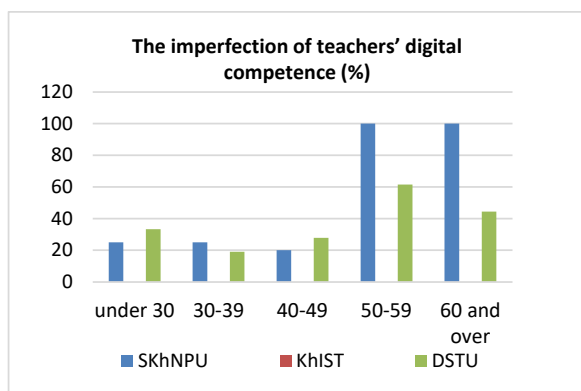
Figure 1. The imperfection of teachers' digital competence (%).
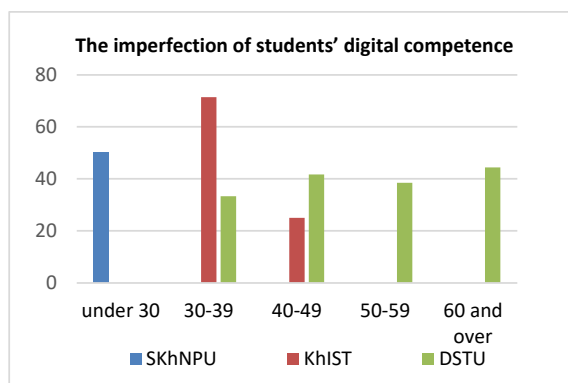
Figure 2. The imperfection of students' digital competence (%).

This imperfection is claimed mostly by the teachers of SKhNPU and DSPU (between 44% and 100%), aged between 40 and 60, it isn't claimed by teachers of KhIST of all age groups (0%). About the quarter of teachers at SKhNPU and DSPU are not satisfied with the development of their TDC. Almost all teachers are dissatisfied with the students' level of digital competence, excluding young and older generation of KhIST (0%) that is proved by the fact, for example at SKhNPU, that there is no certain discipline, aimed at developing students' digital competence, in curricula

The teacher training, focused on developing TDC during the quarantine, has changed, as well as its forms have. We can consider which forms appear to be the most effective and preferred by teachers (table 3).

Table 3. The ways of developing teachers' digital competence.

	SKhNPU		KhIST		DSPU	
	BQ	DQ	BQ	DQ	BQ	DQ
Course of further training	23,9	4,8	18,2	9,1	22,1	9,5
Self-education via the Internet	95,2	100	81,8	81,8	100	100
Consultations with colleagues	57,1	71,4	63,7	72,7	82,1	77,9
Online webinars	38,1	47,6	45,5	36,4	25,3	54,7
Private lessons	0	0	0	0	1,1	2,1
There is no need	0	0	0	9,1	0	0
Others	0	9,5	0	0	1,1	8,4

Most teachers are trained by conducting self-education activities, courses of further training at all HEIs, which are mostly realized via webinars. However, the situation is different at different HEIs, depending on the teachers' age. So, self-education via the Internet for teachers, aged under 30, appears to be effective at SKhNPU and DSPU (100%), at SKhNPU the consultations with colleagues take the second place (75%), short online webinars – 5%.

Long courses of further training are not suitable for young generation of teachers. But at DSPU this age group has the different answers – 33% for both consultations with colleagues and short online webinars, the courses of further training under the condition of 100% self-education via the Internet. At KhIST the teachers of this age group don't master TDC in such a way, they use different ways and means, as they have higher level of training as the condition of conducting their professional activities even before the quarantine. At the end of 2019 Moodle at KhIST was developed by 78%, during the quarantine – 98%. This means that self-education and consultations with colleagues for teachers, aged under 30, turn to be the most effective form for developing TDC. This can be explained by their digital literacy and incomprehension of the necessity to master TDC. The courses of further education (100%) appear to be the most interesting for teachers at SKhNPU, aged between 30 and 39, 50% – for both self-

education via the Internet and online webinars. For the teachers of this age at KhIST self-education via the Internet (85,7%) and consultations with colleagues (85,7%) are the most suitable, but there are those teachers who are interested in the courses of further training (14,3%) and short online webinars (42,8%). Thus, they have already had the conscious need to develop TDC. The teachers of DSPU the least choose the courses of further training (19,4%) and the most – self-education via the Internet (66,7%), the consultations with colleagues (57,0%) and short webinars are also helpful for them. At the same time the courses of further training at DSPU have been essential for developing TDC, the teachers were stimulated to work in Moodle, but when the problem arose, they became interested in how to solve this problem, so they chose short online webinars and consultations with colleagues. The age between 40 and 49 is characterized by other answers. The courses of further training (100%) are helpful for improving teachers' qualification, 40% are influenced by self-education via the Internet and consultations with the colleagues. So, it is necessary to have thorough long-term education and additional sources. This can be explained by new requirements to distance education, for example, how to take state and qualification exams, to hold a session and to check students' assignments. At KhIST, the consultations with colleagues (75%) and self-education via the Internet (75%), online seminars (50%) are helpful the teachers, some of them need the courses of further training. The teachers at DSPU give similar answers to KhIST about self-education via the Internet and consultations with colleagues, but they less need online webinars (50%) and more need the courses of further training (36%) than at KhIST. This can be explained by the fact that the teachers at DSPU are older that at KhIST. The teachers, aged over 50, equally use all the ways of developing TDC at SKhNPU (all the ways get 50%), at KhIST there are not many teachers of this age group that is why they are not trained, at DSPU they study more, however, there are much more teachers of this age group than at SKhNPU and KhIST. They use all the ways, but the courses of further training are preferable (more than 77%). The teachers, who are over 60, also improve their qualification, but to different extend and by different ways. So, at SKhNPU they mainly study through the self-education via the Internet and consultations with colleagues, but they don't use the courses of further training and online webinars. At KhIST there are no teachers of this age that is why they don't improve their qualification. There are many teachers of this age at DSPU and they use mainly the same ways as the teachers at SKhNPU, and they use online webinars (36,4%), too.

We have studied how the use of different forms/ways of communicating of teachers with students and colleagues in distance education have changed during the quarantine (Question 11). It is found out that telephone connection, which was the priority way of communicating at all the HEIs, is also used, but the frequency of its use has slightly decreased among the teachers of all HEIs, excluding DSPU where it is at the previous level. The calls via the messengers have decreased at SKhNPU, increased at KhIST and been the same at DSPU. The number of online-consultations, online-lectures and online-seminars has significantly increased at all HEIs and reached 100% rate. The number of online department meetings, taking examinations and presenting course works has also increased at all HEIs (100%), excluding KhIST.

This proved the complete transition of these HEIs and their teachers to conducting the learning process in the form of distance education. The changes have occurred in using digital tools by teachers in their professional activities. All the teachers use presentations less, that means that lectures have changed their character. At KhIST audio and video are used more (100%). This is a prospective direction of organization of practices with the analysis of what is seen and doing tasks, based on them. All the teachers use computer tests more, excluding the teachers of DSPU. This can be explained by the fact that the teachers at DSPU hope that students will take examinations at face-to-face meeting. Mind maps are more used at HEIs, excluding SKhNPU where they have been used at rather high level before. They are considered to be reference signals of V. Shatalov as visual means at lectures. Instead of the presentation, which has pages, the mind map is always in front of students' eyes and repeated many times, so it contributes to better assimilation of material. The use of blogs, interactive posters, and virtual tours has increased in all HEIs, whereas the use of virtual laboratories has increased at SKhNPU and KhIST a lot and decreased at DSPU. This can be explained by the fact that the combination of words with visual aids contributes to assimilation of material. Special attention should be paid to the fact that

these visual aids must be interesting and repeatable in different forms. The teachers of SKhNPU use various digital tools, whereas the teachers at DSPU don't use them, at KhIST they reduce the use of other digital tools. This can be explained by the fact that every teacher has academic freedom within the education standard. However, 20% of teachers at SKhNPU and 18,2% of teachers at KhIST haven't used digital tools yet that is a large percentage of teachers. This is caused by the fact that some teachers gave all the lectures and seminars within the academic disciplines before the quarantine started (for example, higher school pedagogy and pedagogy in the third semester). That is why they didn't use any digital tools.

The level of the development of teachers' digital competence is presented in table 2. According to the methods selected [1] it's revealed: there are no newcomers of A1 level at any HEI, all the teachers have the practice and experience of using TDC in education (table 1). Level A2 is the highest at SKhNPU, DSPU takes the second place and it is the lowest at KhIST that proves their high readiness to distance education. The greatest number of teachers who has level B1 is at DSPU and KhIST, the least number is at SKhNPU that says about the insufficient readiness of some teachers of SKhNPU to do their professional activities in distance education. Most teachers of SKhNPU have a level of expert in comparison with the teachers of DSPU and KhIST. No teachers at SKhNPU have Level C1, but some teachers at DSPU and KhIST have it. The teachers of Humanitarian disciplines don't have level C2 that is natural. These data indicate that the level of digital competence of teachers of Humanitarian disciplines is different within one HEI and it differs significantly between different higher education institutions.

The practical significance of the results of our research refers to the fact that the level of digital competence of teachers of Humanitarian disciplines and the results of its analysis make it possible to develop the system of further training and webinars based on diagnosing digital competence of the teachers of Humanitarian disciplines. So, according to the results of the survey of teachers of Humanitarian disciplines at SKhNPU and the analysis of reports of the departments about the arrangement of distance learning during the quarantine, we submitted the proposal about the arrangement of differentiated internships to the administrative staff for developing digital competence of teachers of Humanitarian disciplines. According to Order 64-od of SKhNPU dated April 14, 2020 "On Arrangement of Educational Process during New Academic Year and Planning Teaching Activities of Scientific and Pedagogical Staff During 2020-2021 Academic Year", the individual working plan of each member of scientific and pedagogical staff includes intra-university internship per 8 hours for developing digital competence and implementing the individual development trajectory, taking into account the needs of employees, their level of digital competence development, and objectives of the university on the distance learning platform of SKhNPU according to a certain schedule at the Department of Information Technology. In according to this order at the Department of Information Technologies of the Institution of Informatisation of SKhNPU, the internship programs were developed on the topics [7]: "The implementation of information and communication technologies in the educational process" (Level A), "The implementation of open resources in education" (Level B), "Technology of developing the distance course on the platform Moodle" (Level C). Levels A1-A2, B1-B2, C1-C2 are combined as in practice they are very close to each other. The topics of the program of level A include the familiarization with Google services for developing the personal environment (making personal email, Google Communities, Google Calendar, and Google Disk). In the program of Level B, the participants are proposed to make educational products for distance learning (PowerPoint presentations), video and audio files, infographics (Canva), mind maps (XMind), interactive posters (Thinglink), etc.). The program of level C includes the development and presentation of the distance course on the platform Moodle. After finishing the internship, the participants get certificates, approved by the Academic Council of SKhNPU. This internship is developed for teachers of Humanitarian disciplines, as teachers of technical disciplines have a high level of the development of digital competence. It helps teachers of Humanitarian disciplines arrange distance learning during the quarantine. The purpose of the internship is to improve the digital competence of teachers of pedagogical universities for implementing information and communication technologies in scientific and teaching

activities for different profiles of curricular, for familiarizing with the system of distance learning on the platform Moodle, innovative approaches to implementing DL in HEIs. Special attention is paid to the tools of a safe cyber environment, searching and critical processing of information, multimedia learning resources, and the tools of effective intellectual activity in a personalized learning network. Special attention is paid to the integration of e-resources (video and photo hosting) and mass online open courses (MOOCs), principles of academic integrity, etc. The final result of the internship is the portfolio of digital technologies for improving the process of implementing a certain curriculum and author course-resource on the distance learning platform Moodle [7]. One of three internships is free, but the administrative staff of the university solves the problem of giving an opportunity to the teachers who have level A of the development of digital competence to master the further levels free of charge. We should emphasise that before the internship teachers are proposed to take part in an online survey to define the level of their digital competence development and according to the survey results the teachers can choose the internship program (Levels A, B, C). The internship is practice-based and pragmatic. After it, the further training of teachers is planned to be more systematic, to have a wider scope and longer term. These issues are being developed now and the results of this research are the basis for making administrative decisions about developing digital competence of teachers of Humanitarian disciplines for ensuring the education quality in the conditions of quarantine measures due to the internship and further training of teachers of Humanitarian disciplines.

The data obtained in the research prove that the level of development of digital competence of teachers of Humanitarian disciplines is different within one higher education institution and it is significantly different among HEIs. We should emphasise that the levels of teachers' digital competence are similar to the data of Russian research [1]. However, they don't focus on the specificity of Humanitarian disciplines that is why all the levels of TDC are present. We also compare obtained empirical data with data obtained by Nataliia V. Morze et al. ([22], [23]) about TDC and the motivation of teachers of all the disciplines for its development. When the quarantine wasn't introduced, in usual conditions of pedagogical activities, the factors that influenced the motivation of teachers of different disciplines for mastering TDC were listed: STEAM-education (Science, Technology, Engineering, Art, Mathematics) [34]; the development of competences (subject [11] and key [32] ones); the learning personalization [12]; adaptive learning [27]; practice-based learning, oriented to the certain results [35]; the development of entrepreneurial [44], research [24], and critical [31] thinking; gamification – learning by playing [42]; the development of informal education, openness and accessibility of education [36]; mobile learning [41]; the change of the teacher roles [1]. There are different points of view at the preconditions of mastering TDC at usual times and during the quarantine and the pandemic, but there are some similar points: the change of the teacher and student roles, practice-based learning, and mobile learning that indicate a decrease in the number and strengthening of certain preconditions of the influence on mastering TDC in the conditions of the quarantine. In usual conditions, teachers are more motivated for mastering the tools for working with electronic documents that proves their readiness to the transition to electronic document management that is also an important in both the quarantine and mass distance learning [23]. We should emphasise that in the conditions of the quarantine it is necessary to train teachers how to build the educational process on DT as the new system of work should be implemented, whereas in usual conditions it is necessary to improve teachers' qualification in the sphere of developing their digital competence, taking into account the blended learning: studying electronic documents, tools for scientific communication, communicating and sharing messages, managing the learning process, arranging activities, and demonstrating the opportunities of mobile devices in the learning process [23]. According to our research, the motivation for developing TDC in the conditions of the quarantine can be various and complex that combines inner motives and external stimuli. The other researches study only the inner motivation of teachers [23]. The assistance of colleagues and administrative staff of HEIs is required, but in the conditions of the quarantine the role of state authorities in organizational, technical, and informational support of DT and training teachers to do such work is increasing. Also, in the conditions of the quarantine it turned out to be that the necessary productive activity of teachers, new communication ethics and relations between teachers and students, as Garry

Falloon [6] emphasised earlier, do not depend on the quarantine, they are the conditions of effective DL. Thus, features of the development of TDC are common and different in usual conditions of HEIs work and in the conditions of the quarantine.

4. Conclusions

The carried-out research allows to assert that:

1. The chosen for research issue is relevant in the context of solving identified contradictions and problems in theory and practice of higher education in Ukraine and in the world. The issue is insufficiently studied problem of education theory. The researches, which are present, mainly reveal DL in the conditions of the quarantine and digital tools that are effective in DL. In the conditions of mass digital education during the quarantine the role of human factor in supporting higher education quality is increasing. This proves the necessity to turn to the problem of developing digital competence of teachers, in particular teachers of Humanitarian disciplines, whose main professional focus is a human but not technics.

2. The identified peculiarities of the influence of the quarantine measures on arranging DL by teachers of Humanitarian disciplines at HEIs. These peculiarities include increasing the workload of teachers and the necessity to master TDC, time management, and health preserving learning technologies; the lack of time for developing TDC and the sudden transition of all teachers with different levels of TDC to distance learning, even those who are not ready to do it that influences the education quality, the time spent to prepare for classes, and the motivation of teachers of Humanitarian disciplines to master TDC in the conditions of the quarantine, regardless of age and experience; the change of the content and forms of teachers' activities in distance education, the use of new digital tools, resources, and their search; mutual support, consulting and mutual help of teachers in arranging distance learning and educational process in the conditions of the quarantine; the increasing opportunities for improving the qualification in the sphere of developing TDC in informal education, the absence of financial support of the state in mastering TDC, the responsibility of HEIs administrative staff for supporting the information autonomy of HEI, which makes the exchange of the experience in arranging DL more complicated; giving the opportunity for teachers and students by communication technology company to freely use their platforms, digital services, and tools during the quarantine; a new document management and communication.

3. The peculiarities of developing digital competence of teachers of Humanitarian disciplines during the quarantine are revealed: the level of the development of TDC is different and it depends on teachers' ages, teaching experience, previous training for developing TDC and experience of implementing distance learning in educational process before the quarantine, stimulation and inner motivation of teachers for mastering TDC, as well as the presence of technical, organizational, informational, and financial opportunities for its development. There are similar and different features of developing TDC in the conditions of the quarantine and in the usual conditions. The scientific framework for its developing in the conditions of the quarantine includes pragmatic, practice-based, system-based, informational, organizational and competence-based approaches.

4. The needs of teachers of Humanitarian disciplines in education for developing TDC are distinguished. There is an urgent need of all the teachers to improve their qualification, participating in the courses of further training in distance education and short-term thematic webinars on a specific problem; the differentiated learning is required that depends on the level of the development of TDC, digital literacy, teaching experience, and teachers' ages.

5. The challenges in arranging DL are distinguished: the different levels of the development of TDC; the lack of organizational, material, informational, and technical resources, the absence of the conditions at home for carrying out DL during the working day; simultaneous training of teachers for developing TDC and the arranging of the real educational process.

6. The justified recommendations are given to HEIs administrative staff on developing TDC based on which the administrative decisions are proposed and made. Three internship programs of different

levels are developed, depending on the results of diagnosing on the basis of tested methods and survey results.

The prospects of further research are the development of the concept of digital education at HEI and training teachers for its further implementation, the development and implementation of topics of long-term courses for improving qualification of teachers who have different levels of the development of digital competence, the justification of DL system in the conditions of the quarantine, the development of stimulation and motivation of teachers of Humanitarian disciplines for enhancing their digital competence.

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