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An evaluation of Ukrainian future teachers' of humanities readiness for e-education

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ABSTRACT. The article focuses on the students' readiness for online education in Ukrainian pedagogical higher education institutions, since distance learning is not only a new learning technology for teachers-to-be, but also the object of their study and further application in the pedagogical career. The study employed the authors' questionnaires for 120 faculty members and 320 students, observations and diagnostic tests. To assess the students' current readiness for e-learning, the following criteria were employed: independence in the acquisition of knowledge, cognitive activity, mastering methods of online education activities. Characteristics of levels of students' readiness for e-learning are given. The need for initial training of teachers and students to use distance learning technologies is confirmed. Analysis of research data revealed mostly medium and sufficient level of teachers'-to-be independence of learning, cognitive activity and experience of application of online educational activities. Basic conceptual positions and conditions for effective e-learning in Ukrainian pedagogical higher education institutions as prerequisites for students' readiness for e-education are described.

Keywords: distance education, readiness for e-education, students, future teacher.

Uma avaliação da prontidão dos futuros professores ucranianos de humanidades para a educação eletrônica

RESUMO. O artigo centra-se na disponibilidade dos estudantes para o ensino em linha nas instituições de ensino superior pedagógico ucraniano, uma vez que o ensino à distância não é apenas uma nova tecnologia de aprendizagem para os futuros professores, mas também o objeto do seu estudo e posterior aplicação na carreira pedagógica. O estudo utilizou os questionários dos autores para 120 docentes e 320 estudantes, observações e testes de diagnóstico. Para avaliar a atual disponibilidade dos estudantes para a aprendizagem eletrônica, foram utilizados os seguintes critérios: independência na aquisição de conhecimentos, atividade cognitiva, métodos de domínio das atividades educativas em linha. São dadas características dos níveis de prontidão dos estudantes para o *e-learning*. Confirma-se a necessidade de formação inicial de professores e estudantes para a utilização de tecnologias de ensino à distância. A análise dos dados da investigação revelou, sobretudo um nível médio e suficiente de independência de aprendizagem dos futuros professores, atividade cognitiva e experiência de aplicação de atividades educativas em linha. São descritas posições conceptuais básicas e condições para uma aprendizagem eletrônica eficaz nas instituições de ensino superior pedagógico ucranianas como pré-requisitos para a prontidão dos estudantes para a educação eletrônica.

Palavras-chave: educação à distância, prontidão para a educação eletrônica, estudantes, futuro professor.

Una evaluación de la preparación de los futuros profesores de humanidades ucranianos para la educación electrónica

RESUMEN. El artículo se centra en la preparación de los estudiantes para la enseñanza en línea en las instituciones de educación superior pedagógica ucranianas, ya que el aprendizaje a distancia no es sólo una nueva tecnología de aprendizaje para los futuros profesores, sino también el objeto de su estudio y posterior aplicación en la carrera pedagógica. El estudio utilizó los cuestionarios de los autores para 120 profesores y 320 alumnos, observaciones y pruebas de diagnóstico. Para evaluar la preparación actual de los estudiantes para el aprendizaje electrónico, se utilizaron los siguientes criterios: independencia en la adquisición de conocimientos, actividad cognitiva, métodos de dominio de las actividades educativas en línea. Se indican las características de los niveles de preparación de los alumnos para el aprendizaje electrónico. Se confirma la necesidad de formación inicial de profesores y alumnos para el uso de las tecnologías de aprendizaje a distancia. El análisis de los datos de la investigación reveló principalmente un nivel medio y suficiente de independencia del aprendizaje, la actividad cognitiva y la experiencia de aplicación de las actividades educativas en línea de los futuros profesores. Se describen las posiciones conceptuales básicas y las condiciones para un aprendizaje electrónico eficaz en las instituciones de educación superior pedagógica ucranianas como requisitos previos para la preparación de los estudiantes para la educación electrónica.

Palabras clave: educación a distancia, preparación para la educación electrónica, estudiantes, futuro profesor.

Introduction

The COVID-19 pandemic raging around the world has caused institutional and behavioral "shock effects" in various areas of human activity including education. Due to massive and unexpected closures, affected countries and communities have been forced to large-scale lockdowns and pushed to seek alternatives in online platforms, including digital learning as a replacement for normal educational processes (The New Normal of Digital Learning Post COVID-19, 2020). Online-based learning or virtual learning has become if not "the main agent for education" (Assareh et al., 2011), then a cutting-edge and global solution in areas of coronavirus outbreak (Rayuwati, 2020).

Distance education during a pandemic placed significant demands on the whole education system, the most on teachers (Mikušková et al., 2020). Universities around the world were largely unprepared for a sudden switch to online learning prior to the COVID-19 pandemic (Mitchell, 2020; Ochavillo, 2020; Prata-Linhares et al., 2020). The following reasons are viewed as essential barriers of rapid transition to remote teaching and learning:

- lack of a certain provision: legal; methodical; financial and logistical; organizational process management, etc. (Dubey et al., 2020; Mishra et al., 2020);
- lack of Information and Communication Technology infrastructures to support blended e-learning approaches (Rudenko et al. 2020);
- time-consuming development of e-courses, review, completion, updating of didactic, electronic, test teaching aids;
- lack and/or imperfection of control criteria of e-learning process etc.

The finding of recent studies carried out on online education during the COVID-19 pandemic period (Mikušková et al., 2020; Mishra et al., 2020; Nenko et al., 2020; Prata-Linhares et al., 2020; Rayuwati, 2020) highlighted weakness in the teaching-learning process from the students' perspective as well as from the perspective of teachers involved in online education:

- insufficient training of both teachers and students to develop and successfully navigate distance learning courses, to introduce innovative e-learning technologies;
- shortage of pedagogical methods of e-teaching various disciplines;
- low flexibility and adaptability of both teachers and students;
- lack of skills to integrate theoretical and practical learning in distance learning;

- low level of students' and teachers' digital literacy.

While the quality of learning outcomes of e-education is readily recognized to largely depend on the level of teachers' preparedness for distance education; the imperative to train teachers for e-teaching is clear and the need to update the teachers' training programs in higher education institutions is obvious, teacher training still does not occupy the central place in the context of the distance education (Lage et al., 2019). Compelling evidence demonstrates that training is needed to enable teachers to adapt to new paradigms and tasks that are necessary in today society (Lage et al., 2019).

When it comes to the distance education teacher, professional requirements are broadened as they demand a very specific range of skills, profile and knowledge for the performance of such role (Lage et al., 2019). The educational situation during the spread of COVID-19 highlighted the need to assess the readiness of Ukrainian students – future teachers of humanities for e-education and figure out what essential professional skills and competences, personality traits or characteristic are potentially needed for a distance education teacher.

Theoretical framework

Distance learning is a purposeful process of interaction between a teacher and a student by means of special pedagogical technologies that effectively deliver education to students who are not physically "on site" to receive their education. Instead, teachers and students may communicate asynchronously (at times of their own choosing) by exchanging printed or electronic media, or through technology that allows them to communicate in real time (synchronously) (Moti, 2008).

With the COVID-19 pandemic, formal education in higher education processes was interrupted (Kolcu et al., 2020) and different remote learning technologies such as electronic, web-based (web-supported), online, distance and mobile education that "can be provided either fully online or through blended learning (hybrid learning)" (Rudenko et al., 2020) to observe social distancing as preventive measure against COVID'19 have been initiated.

Although none of the teachers were fully prepared for such a situation, neither materially, nor didactically, or in terms of the content (Mikušková et al., 2020), many of them became comfortable using synchronous tools (Zoom, Google Meet, Microsoft Teams) and asynchronous ways

to deliver instruction (Google Classroom, Learning Management Systems and screencasting tools), there are still areas of concern related to assessments and the extent to which they engage students in meaningful collaboration (Gende, 2020).

The effectiveness of distance education depends on many factors, including the actual organization of distance learning, the purpose and objectives of such learning, motivation of students and teachers, their readiness for such form of education, technical and methodological support and more. Equally important in distance education, in our opinion, is taking into account the needs of the customer of educational services, rational use of available resources, direct access of students to the knowledge base, interactivity and individualization of learning, increasing productivity of independent learning activities.

However, fundamental to the successful implementation of distance education is the human factor, therefore, an important issue is training teachers for the qualified mastery of necessary technological skills to work in the system of distance education as its content and form substantially differ from the traditional (Dubey et al., 2020; Mishra et al., 2020).

Today, the effectiveness of a teacher in performing professional functions in distance education depends on the quality of mastering the knowledge, skills and abilities of pedagogical activities characteristic of this education system, which in turn necessitates the introduction of special training courses for teachers, which will be aimed at developing additional competencies required by a distance education teacher. Since classes are taught using the internet, online teachers need to be tech savvy and comfortable with the latest online tools and technology (9 Skills that make a great online school teacher, 2020), which means the ability to effectively search and structure information, its adaptation to the peculiarities of the pedagogical process and didactic requirements, skilled work with different information resources, professional tools, ready software and methodological complexes, digital educational resources in the educational process, maintaining the documentation of the educational institution on electronic media.

It is quite obvious that a distance educator should assume new responsibilities and master the full arsenal of computer technologies to independently develop a distance learning course; content management and evaluation of its

effectiveness; use Internet, e-mail, chat, participate in a teleconference; arrange direct individual and interactive communication with students.

The teacher must be familiar with the methods of conducting various types of training sessions and control activities, measurement/evaluation process (Kolcu, et al., 2020) during distance learning, master special software for creating, storing, accumulating and transmitting web resources, and to provide authorized access subjects of distance learning to these web resources, for the organization of the educational process and control over learning via the Internet and local network.

An important role in training the teacher to work in distance education takes his/her communicative competence, since personality-oriented approach involves constant communication of students and teachers in the process of cognitive activity, their joint activities and interaction. In contrast to face-to-face forms of learning, a distance education teacher must be able to determine the psychological mood and psychological characteristics of students at a distance to pay more attention, for example, to introverts, encouraging them to be active; to restrain the passion of extroverts, preventing conflict situations and form a communication culture in class.

Faculty staff is expected to undertake a wide range of new responsibilities, for instance, identify and resolve instructional, interpersonal, and technical problems in terms of distance learning (Guri-Rosenblit, 2018); provide feedback; unambiguously, concisely and clearly express educational material, advice, instructions by means of modern devices, etc.

According to Mikušková et al. (2020) efficient teachers should be open to novelty, curious and creative and have a well-developed vocabulary; be receptive to unconventional ideas and beliefs and accepting of different cultural backgrounds and the various feelings and behaviors of their students. Self-discipline, sense of duty (Mikušková et al., 2020), ability for regular independent cognitive activities and psychological readiness to use computer and multimedia technologies instead of face-to-face teaching are also necessary for successful pedagogic work.

Purpose of the study

There is a noticeable scarcity of discussion on the essential role of teachers in online learning (Guri-Rosenblit, 2018). Ultimately, existing research on the factors that impact the efficiency of teacher training for e-teaching is limited. Therefore, the present study fills a gap in the research by examining the current

readiness of Ukrainian teachers-to-be for e-education at higher education institutions. The questions guiding this research is "What personality traits, characteristic or skills could potentially improve readiness of teachers-to-be for distance education?"

Relevance of the present study is imposed by a number of contradictions between the social order of modern society for the introduction of distance learning into the educational process and the insufficient actual level of teachers' readiness for e-teaching; the urgent need of society for teachers of humanities who can use e-learning technologies and the current nature of future teachers' training in higher education institutions.

Instrument

This study employed observation, computer testing, diagnostic tests and the authors' Questionnaires for faculty member and students-future teachers. The Questionnaires were distributed by e-mail, and the invitation to participate was sent to 650 faculty members and students, out of which 120 faculty members and 212 students – future teachers of Pavlo Tychyna Uman State Pedagogical University (subdivision: Faculty of Engineering and Pedagogical Education) and Bohdan Khmelnytsky Cherkasy National University (subdivision: Educational and Scientific Institute of Pedagogical Education, Social Work and Art) agreed to partake. None of the students had previous educational experience or received initial training to teach at a distance. More than 300 personal interviews have been conducted by the authors by means of Skype, Google Meet and Viber. The results of the study were processed by methods of mathematical and statistical data processing. The obtained data were subjected to statistical analysis, followed by qualitative interpretation and meaningful generalization.

Findings

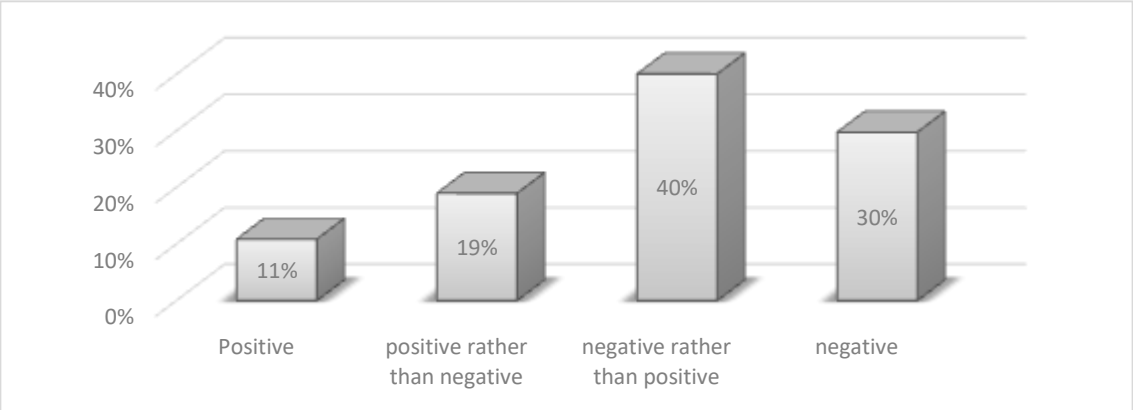
Results of the Questionnaires

A survey of 120 teachers and 212 students was conducted to inspect the e-learning implementation in higher education institutions as well as to disclose the attitude of students-teachers-to-be and faculty members of Ukrainian pedagogical higher education institutions to distance learning. The content of the questionnaires is given in Annex A (Questionnaire for students) and Annex B (Questionnaire for teachers).

The findings of the survey indicated that insignificant part of students have a certain interest in distance learning. However, the same data show that not all students believe in the effectiveness of

learning remotely using modern computer technologies and have mostly negative attitude towards the introduction of distance learning in Ukrainian universities (Figure 1). It is important to accentuate that the attitude to distance learning does not differ between junior and senior students.

Figure 1. Attitude of students towards the introduction of distance education in Ukrainian universities.



Source: authors' calculations based on the conducted survey.

The students pointed that "usual learning and live communication are better. Online classes make it harder to learn new topics and harder to perceive the teacher. Many young people do not want to study and simply do not come to class. It became a bit harder, because the amount of self-study increased" (Nastya, 19 years old, III-year student).

"My attitude to distance learning is neutral. I can't say that I like or dislike studying at home. Unfortunately, there are many nuances to learning online, many students have problems with the Internet and do not have the opportunity to study through a computer. I will hope that we will return to university soon" (Alex, 18 years old, II-year student)".

"I'm happy about the introduction of remote learning! Obviously, nothing can replace face-to-face communication with the teacher, his/her charismatic nature of teaching and conveys the learning material to the student. On the other hand, I began to study better, since as a student who lives 70 kilometers from his school and spends a lot of time on the way to university (2 hours), I study in a comfortable home environment now" (Danylo, 20 years old, IV-year of study).

"My attitude to distance learning is neutral. However, there are moments that are not very convenient. My future profession needs more practice than

theory, I'm the fourth-year student. Distance learning is a common problem for freshmen in terms of adaptation, because they are not adapted to such learning conditions, they are maladapted and this is a discomfort for them and for other students as well. The students must learn all the load of theory by themselves. It's really hard. Although many teachers provide lectures, they are not perceived as in full-time education. We learn more in real life than online" (Yana, 20 years, IV-year student).

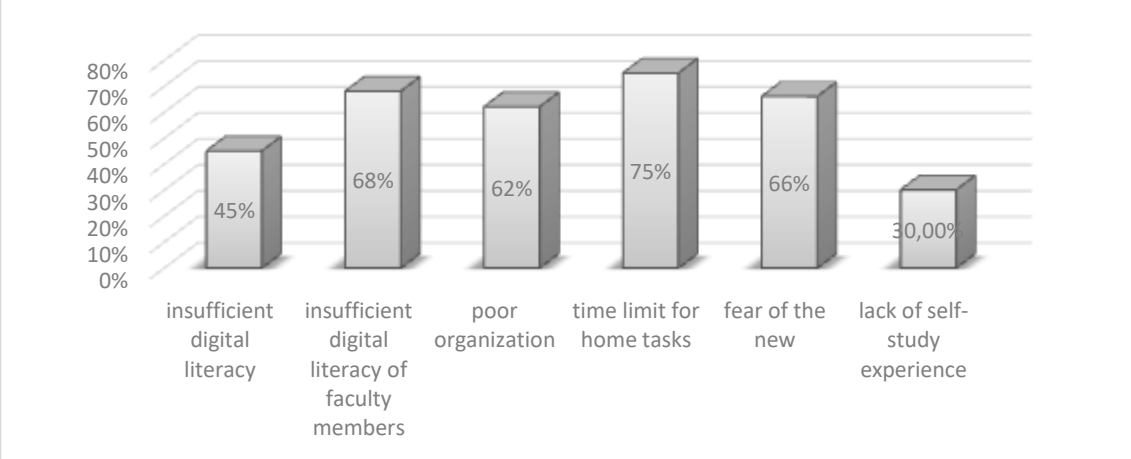
The question "Do you think Ukrainian society is ready for the introduction of distance learning?" showed that merely 8% of respondents believe that Ukrainian society is ready for the introduction of distance learning. 73 % are quite sure Ukrainians are not ready for e-learning, while 19% of the surveyed were not ready to answer the question.

When asked about the impact of the introduction of national quarantine on the learning process, 25% of respondents indicated an increase in the workload and the amount of educational material, 58.9% – saving time and the ability to work more efficiently, 66% – increased access to information.

64% of students surveyed have a computer and Internet access at home. Almost 45.7% of respondents get positive emotions working with a computer. However, almost half of students doubt the possibility of computer technology to completely replace traditional education or deny it altogether.

The average answers to the question with multiple choices "What prevents the introduction of effective distance education at the university?" are shown on the Figure 2.

Figure 2. Reasons for ineffective distance education.



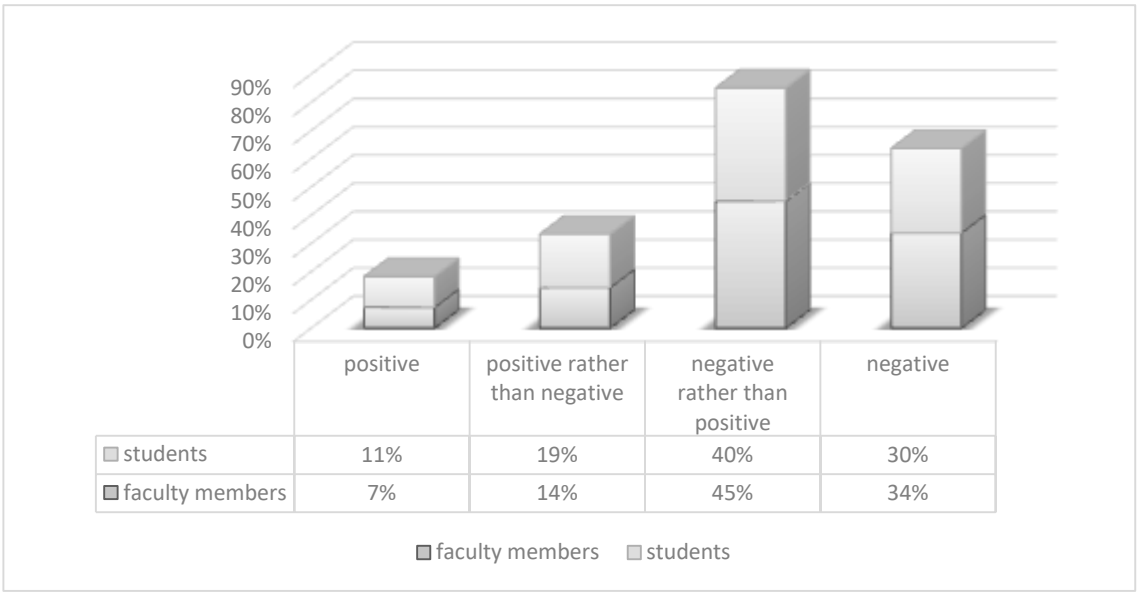
Source: authors' calculations based on the conducted survey.

Although young people are often described as "digital natives" and "millennial students" (Dede, 2005; Oblinger, 2003) and are expected to utilize digital tools when they study at a university (Pappas, 2017; Ubachs et al., 2017), 66% of respondents note their fear of the new. It follows that effective learning through the electronic technologies requires training and cannot be taken for granted as "a natural attribute possessed by the young generation" (Guri-Rosenblit, 2018).

Many higher education students believe that distance learning has no advantages. However, a large number of respondents noted the possibility of individual pace of mastering disciplines and the ability to choose a convenient place and time of study. Among the advantages of e-learning technologies, 65% of respondents also named individualization of learning; 36% – increased amount of educational material; 72% – new learning opportunities; 39% – withdrawal from reproductive teaching methods to creative methods; 79% – use of information and communication technologies.

As aforementioned, a survey of faculty members has been concurrently conducted, which proved that the latter were not ready to the drastic shift to remote teaching compared to students (Figure 3).

Figure 3. Attitude of faculty members towards the introduction of distance education in Ukrainian universities.



Source: authors' calculations based on the conducted survey.

Neither an overview of the possibilities of distance education, recommendations, and guidelines for faculty members and students, nor official guidelines regarding the content and organization of education from the Ministry of Education did not exist (Mikušková et al., 2020) until the fall semester 2020. Teachers in general experience increased anxiety and helplessness in the same way as people from other professional backgrounds (Mikušková et al., 2020).

28.3% of teachers believe distance learning perspective, and 6.6% have experience in distance education or its elements in.

Merely 7% of the surveyed faculty members consider Ukrainian society to be ready for online education; 69% believe Ukrainians are not ready for this kind of education; 24% were not ready to answer the question.

Hardly 38% of educators have a computer with Internet access at home, which is much lower than that of students.

Only 25% of respondents are familiar with regulations in the field of distance learning, and 31% indicate that they understand distance learning technologies.

95% of professors poin out that the current arrangement of distance learning does not take into account their professional interests and their academic freedoms are reduced.

Compared to students, a smaller proportion of teachers (18%) believe that computer equipment in their educational institutions meets the requirements of distance learning. 39% find it difficult to answer.

The analysis of responses to the question with multiple choices "What prevents the introduction of distance learning at the university?" made it possible to identify the possible reasons for slow implementation of this form of education: 90% – limited time to prepare learning materials for online teaching; 88.3% – lack of funding; 85% – fear of the new; 83.3% point to the lack of appropriate regulatory framework; 80.8% – poor organization of distance education at universities; 77.5% – the underestimation of the complexity of creating distance learning courses, teaching materials by the university management; 70% – unpreparedness of teachers and students for educational innovations; 63.3% – low digital literacy of educators; 35% – low digital literacy of students.

Among the advantages of using distance learning technologies, 72.5% of respondents mentioned diversity of information and communication

technologies; 71.7% – individualization of learning; 45% – new learning opportunities; 44.2% – withdrawal from reproductive teaching methods to creative methods; 33.6% – increased amount of educational material.

As we can see, these indicators are slightly different from the students' answers: teachers are more skeptical about distance education. However, young educators are more positive than older teachers.

As for the negative aspects of distance education, faculty members name low motivation of students to learn, lack of face-to-face interaction between teachers and students, the impossibility of e-learning for some specialties and possible reduction in the quality of learning.

The survey disclosed that at the time of the introduction of compulsory distance education in educational institutions, there was almost no professional training of faculty members to develop distance learning courses and support distance learning as a tutor.

Criteria of students' readiness for online learning

The next stage of the survey was to substantiate the criteria of students' readiness for online learning, to which we refer:

- independence in the acquisition of knowledge during online learning (Table 1);
- cognitive activity (indicators: development of cognitive abilities; active attitude to creative activity; elements of innovation in educational activities and in one's own behavior; diverse range of interests and needs; the subject's attitude to the activity; ability to adequately evaluate information) (Table 2);
- mastering methods of online education activities (Table 3).

These criteria are an assessment of both the actual process of distance learning in pedagogical higher education institutions and students' readiness for online education.

To determine the level of students' readiness for online education, we singled out the following levels: low, medium, sufficient and high.

Table 1. Levels of students' independence in the acquisition of knowledge.

Level	Characteristics
Low	A student recognizes individual objects, phenomena and facts of the subject area and can fragmentarily reproduce knowledge about them; has fragmentary knowledge with a small total of their volume (less than half of the learning material); absence of skills and abilities.

Medium	Initial level of knowledge, a significant part (more than half) of educational material can be reduplicated reproductively with elements of logical connections; a student is able to perform a simple educational task with a teacher's assistance; familiar with the basic concepts of educational material; can independently make certain generalizations.
Sufficient	A student is able to apply the studied material in standard situations; can explain the main processes that take place and give his/her own examples to confirm some statements; he/she is able to independently perform learning tasks under the program; able to analyze information, freely applies it in practice; control one's own activities; independently corrects the mistakes specified by the teacher; individually determines methods of solving educational tasks; able to summarize and systematize educational information.
High	The student's knowledge, skills and abilities fully meet the requirements of the educational program. A student has stable system knowledge, independently determines the intermediate purpose of own educational activity, evaluates new facts, phenomena; able to independently find additional information and use it to achieve the educational goals, judgments are logical and well-founded; able to plan personal educational activities, evaluate the results of own work; independently finds sources of information and uses it in accordance with the purpose and objectives of own cognitive activity; uses the acquired knowledge and skills in non-standard situations; able to perform tasks not provided by the curriculum.

Source: compiled by the authors.

Table 2. Levels of cognitive activity and their characteristics.

Level	Characteristics
Low	Cognitive abilities are mostly undeveloped, participation in educational and cognitive activities is minimal; there is no formed attitude to educational and cognitive activities; active behavior is possible only under strict external control; lack of meaningful needs; lack of skills and abilities to evaluate information.
Medium	Abilities are underdeveloped, but a student partakes in educational and cognitive activities; a student performs the simplest learning tasks; has the simplest motivation; not always aware of the need for activity; lack of interest; activity is subject to external "demand"; the simplest reproductive skills in evaluating information.
Sufficient	Abilities are well developed, but a student participates in cognitive activity only when necessary without any interest; has one's own opinion; possesses necessary skills and abilities; random interests and needs; selective cognitive perception; difficulties in formulating personal opinion.
High	Active, creative, initiative personality; constant and systematic need for new information; innovative use of the received knowledge; active life position; independence of judgments and the ability to formulate personal opinion.

Source: compiled by the authors.

Table 3. Levels of mastering methods of online education activities.

Level	Characteristics
Low	Partial mastering of experience of applying general educational abilities and skills: summarizing, annotating, working with a distance course, auxiliary textbook, dictionaries, reference books, etc., fragmentary acquisition of special subject skills and abilities; lack of creative experience.
Medium	Mastering the experience of applying general skills: summarizing, annotating, working with a distance course, auxiliary textbooks, dictionaries, reference books and other special subject skills; elementary ability to independently transfer knowledge and skills to a new situation; basic vision of a new problem in a familiar situation; independently combine known methods of activity; primordial capability of finding various ways to solve the problem and alternative evidence.
Sufficient	Experience of applying general and special skills; organization, control (self-control) and assessment (self-assessment) of the process of mastering new ways of cognitive activity during independent work; vision of a new problem in a familiar situation; independently combine known methods of activity; capability of finding various ways to solve the problem and alternative evidence.
High	Possession of various ways of applying general and special skills; mastery of various ways of educational and creative activities through the introduction of various methods and communication.

Source: compiled by the authors.

The next step of our survey is explanation of the levels of students' readiness for online education in higher education pedagogical institutions.

Low level: students who work did not manage to master the necessary knowledge of technologies methods of professional activity during online learning; did not participate in the organization, control (self-control) and evaluation (self-evaluation) of learning outcomes; did not acquire experience of applying general and special subject skills: summarizing, annotating, working with textbooks, dictionaries, reference books, etc.; have not accumulated experience in applying various methods of educational creative activity, identified persistent stereotypes of cognitive activity, especially while problem solving; experienced great difficulties in carrying out communicative activities.

Sufficient level: students mastered a sufficient system of knowledge; rarely participated in the organization, control (self-control) and evaluation (self-evaluation) of learning outcomes; acquired sufficient experience in the application of general and special subject skills: summarizing, annotating, working with textbooks, dictionaries, reference books, etc.; accumulated little experience in the application of methods of educational

creative activity; independent transfer of knowledge and skills to a new situation, vision of a new problem in a familiar situation, unaided combination of known methods of activity, finding different ways of problem solving and alternative evidence, a fundamentally new way to solve the problem, but constantly have difficulty with this; accumulated sufficient experience of communicative activity.

Medium level: students accumulated a deep system of knowledge; did not systematically participate in the organization, control (self-control) and assessment (self-assessment) of the process of mastering new ways of cognitive activity; have accumulated average experience in the application of methods of educational creative activity (independently transfer knowledge and skills to a new situation; to see a new problem in a familiar situation; independently combine known methods of activity; find different ways to solve the problem and alternative evidence; build a fundamentally new way of solving the problem, which is a combination of known), but experience some difficulties; have accumulated sufficient experience of communicative activity.

High level: students accumulated a deep system of knowledge; systematically participated in the organization, control (self-control) and evaluation (self-evaluation) of learning outcomes; mastered the experience and various ways of effective application of general and special subject skills: summarizing, annotating, working with textbooks, dictionaries, reference books, etc.; accumulated experience in the application of various methods of educational creative activity: independently transfer knowledge and skills to a new situation, find a new problem in a familiar situation, independently combine known methods of activity, find different ways to solve the problem and alternative evidence, accumulated extensive experience in communication activities.

To identify the initial levels of readiness formation and quality of learning, development of cognitive activity and experience of implementing methods of activity, the following methods were used: observation, questionnaires, computer testing and diagnostic tests. The total number of students involved is 320. The second, third and fourth year of study students were enrolled. The first-year students were excluded due to the very short term of the study in the educational institutions.

Tables 4 – 6 show the results of the study in the form of distribution of students by levels.

Table 4. Distribution of students by the formation of independence of knowledge acquisition (in %).

Level	Year of study		
	II	III	IV
Low	14.3	13.0	11.2
Medium	23.8	24.1	28.1
Sufficient	41.9	44.4	43.9
High	20.0	18.5	16.8
Total	100	100	100

Source: authors' calculations based on the conducted survey.

Clearly, many students lack the ability of constructing their personal educational trajectory and study independently. 27.7% of respondents named on-line classes via Google Meet, Zoom, Skype, Viber, Zoom as the most convenient forms of e-learning. Hence, it is quite evident that students, particularly at the time of online-based learning, need "substantive guidance, support and counseling throughout their study process" (Guri-Rosenblit, 2018).

Table 5. Distribution of students by cognitive activity (in %).

Level	Year of study		
	II	III	IV
Low	19.0	17.6	20.6
Medium	23.8	23.1	21.5
Sufficient	42.9	48.1	45.8
High	14.3	11.2	12.1
Total	100	100	100

Source: authors' calculations based on the conducted survey.

Analysis of the data given in Tables 4 – 5 indicates that most students are at the medium and sufficient levels, which can be explained by the fact that students of III–IV years of study already had a sufficiently developed level of cognitive activity, independence and knowledge acquisition due to clear targeted learning activities at the educational institution.

The unusual mode of learning "by themselves without expert teachers to guide" (Guri-Rosenblit, 2018) was named by the surveyed students as the main hardship during distance learning. The results of the survey also show that students have difficulties in learning and reduced interest largely due to the low self-discipline, lack of time management skills and poor ability for independent learning,

as well as processing large amounts of information.

67.9% of respondents do not feel uncomfortable not being able to see and communicate directly with the teacher and other students, however, indicate that they do not always receive timely or regular assistance from the teacher. 83% of students would like to receive assistance throughout the learning process in case of difficulties; 11% need such help or explanation at the beginning of the educational process, the rest (6%) – at the end of the semester before the final test or exam.

Table 6. Distribution of students by levels of mastering methods of online educational activities (in %).

Levels	Year of study		
	II	III	IV
Low	23.7	27.7	22.5
Medium	61.0	49.1	57.9
Sufficient	14.3	16.7	15.9
High	1.0	6.5	3.7
Total	100	100	100

Source: authors' calculations based on the conducted survey.

The analysis of empirical data allowed to identify the activities that cause the greatest difficulties for future teachers, in particular: development of distance course content, remote control of distance learning activities, creation of various test tasks.

The fact that low and medium levels of experience in the implementation of methods of activity dominated can be explained by mostly reproductive way of knowledge acquisition in Ukrainian higher education. The vast majority of students have gained experience of online educational activities at low and medium levels. The level of independence, quality of knowledge acquisition and cognitive activity of the surveyed students – teachers-to-be is mainly at the medium and sufficient levels. This is due to the knowledge-oriented approach to the process of teaching in Ukrainian higher education institutions.

Discussion

The given analysis of experience of the arrangement of distance learning in Ukrainian higher education institutions causes necessity of substantiation of conceptual positions and conditions for effective online learning of students of

humanitarian specialties in pedagogical universities – teachers-to-be.

Conceptual positions

Conceptual positions are defined taking into account the specifics of the humanities, namely:

- humanities, in contrast to the basic sciences, are more dynamic, which necessitates the regular renewal of distance learning courses;
- humanities are taught by teachers who are less aware of modern information technology, which necessitates their special training;
- humanities have their own specifics, which can be presented in distance learning courses: there is no need for technical and production processes, which facilitates the creation of distance learning courses, but humanities need to combine verbal and visual evidences.

Thus, based on the analysis of the results of the questionnaires, taking into account our own professional experience, we can formulate the conceptual positions for the arrangement of distance learning of students of humanities in pedagogical higher education institutions.

The first conceptual position: when introducing online learning the needs of the customer of the educational services, the purpose of training and the needs of students should obligatory be taken into account – "designing student-centered programs" (Guri-Rosenblit, 2018).

In the pedagogical universities the customer of distance learning services is not only the higher education institution where the student studies, but also the future place of his employment – educational institutions, which require introduction of the latest pedagogical technologies based on computer technologies and e-learning. Therefore, online learning with the application of e-technologies not only involves the acquisition of certain knowledge, formation of skills and abilities in the subject area of the disciplines being studied, but also contributes to the formation of necessary competencies of a modern teacher-to-be (Ivanchenko et al., 2018).

In conjunction with the abovementioned, it is necessary to acknowledge that motivated students – teachers-to-be demand for use of distance learning technologies since they grant take into account students' individual characteristics and allow to adjust the volume and pace of study, "gain access and learn to utilize the information and communication potential of the Internet" (Alexander et al., 2017) more fully in their

learning and further teaching, develop their own creative potential, etc.

The second conceptual position: distance learning technologies have a dual nature for students of pedagogical higher education institutions: on the one hand, they are technologies that students use in the educational process; however, such technologies are the object of study and mastery.

Unlike students of other specialties, teachers-to-be encounter distance learning technologies in the educational process not only during the study of certain disciplines, where distance learning technologies are used, but also in the cycle of pedagogical and professionally oriented disciplines. While studying these disciplines students study theoretical aspects of e-learning technologies, perform practical tasks, acting both as e-course author and tutor.

The third conceptual position is the formation of cognitive experience, experience of mastering the means of activity, experience of creative activity of students' – teachers'to-be in the process of distance learning.

The fourth conceptual position is that while arranging online learning its specifics should be taken into account: the share of independent work is greater than in traditional education, therefore, educational material should be adapted and the content of distance education should be formed through systematic didactic design (Oliynyk, 2001).

The fifth conceptual position is that students of pedagogical universities must possess the skills of independent learning (a form of organization of educational activities under the direct or indirect guidance of the teacher, during which students mostly or completely independently perform various tasks to develop their own competence and personal qualities) (Zakharova, p. 46, 2005).

It should be noted that independent work of students during distance learning is impossible without quality advice from tutors.

The sixth conceptual position is formulated as follows: online learning in a pedagogical university should be based on the students' productive activities of in the course of the educational problem solving.

Conditions

Substantiation of the basic conceptual positions permits us to proceed to the conditions of effective arrangement of online learning in pedagogical higher education institutions.

The effective and harmonious combination of e-learning technologies and students' training for their implementation

in the process of learning is *the first condition.*

In other words, this condition presupposes coordination of the simultaneous processes of introduction of distance learning technologies in the educational process and pedagogical training, study and mastering of distance learning technologies whilst studying pedagogical and professional disciplines.

The second condition for the arrangement of effective e-learning in pedagogical higher education institutions is: mastering by students of knowledge and skills on development of e-courses and their educational and methodical maintenance adapted for self-study using modern information and communication technologies. The latter includes content and technological training for online learning, development of appropriate diagnostic tools for determining the quality of e-courses, development and implementation of a structural and functional scheme of distance learning coordination.

The third condition: formation the future teachers' ability to support the e-learning process as a tutor on the principles of facilitation, that is training of a teacher-to-be as a tutor, teacher, consultant and mentor, who provides methodological and organizational assistance to students within a specific educational program.

The process of tutors' training focuses on the development of their communicative, analytical, reflective skills and abilities, psychological readiness to work in a virtual space (Osadcha, 2018), facilitation skills, ie establishing and maintaining information links and interaction between students and other participants of the distance education system, regulation of various problems, conflict resolution, adaptation of students to a new form of learning, etc.

Thusly, *the fourth condition*: implication of mainly productive teaching methods aimed at activation of students' cognitive activity, development of their creative abilities, skills to find, analyze and use new information to further perform professional activities.

Ultimately, we have outlined the conceptual positions and the conditions for the effective distance learning of students of humanities – teachers-to-be, which need to be tested in further experimental research.

Conclusions

In a higher pedagogical education institution, distance learning is not only a new learning technology for students – teachers'-to-be, but also an object of their

study and further application in the educational process. Therefore, it is necessary to take into account the peculiarities of the pedagogical process of future teacher training, specifics of distance learning and the requirements for professional qualities of a teacher when arranging e-learning for students of humanities. In the course of the questionnaire the prevailing negative attitude of the participants of the pedagogical process to distance learning was established, as well as lack scientifically substantiated requirements for the development of e-courses for future teachers of humanities and non-availability of special training of faculty staff and students for distance learning. Basic conceptual positions and conditions for effective e-learning in Ukrainian pedagogical higher education institutions as prerequisites for students' readiness for e-learning described in the article may contribute to the improvement of e-learning outcomes of students in Ukrainian pedagogical institutions.

Implications

Research studies on online teaching are important as they provide information about how online instructors might be prepared to teach online across various contexts and countries. The results of this study have implications for: (a) faculty who are teaching online or preparing to teach online; (b) instructional designers who assist faculty to design and facilitate online courses; and (c) administrators who provide support for the faculty to teach online.

Limitations

We acknowledge some limitations in this research. First, the sample size is relatively small was drawn from a limited number of universities in Central Ukraine. Second, questionnaire data were self-reported due to the nature of the study. The data are collected from faculty members and students who chose to respond to the Questionnaires, so the data do not represent all the faculty members and students in higher education. Readers should interpret the results with caution due to these limitations because results may have limited generalizability in different countries.

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Annex A

Questionnaire for students

1. What was your first reaction to the introduction of distance learning?

- ❑ positive
- ❑ positive rather than negative
- ❑ negative rather than positive
- ❑ negative
- ❑ very negative

2. Do you think Ukrainian society is ready for the introduction of distance learning?

- ❑ yes
- ❑ no
- ❑ not ready to answer

3. Do you have a home computer, laptop, tablet?

- ❑ yes
- ❑ no (if you answered "no", proceed to question № 6)

4. Do you have Internet access at home?

- ❑ yes
- ❑ no

5. Does using a computer affect your learning process?

- ❑ yes
- ❑ no
- ❑ other (please, specify)

6. Does the introduction of national quarantine influence your learning process? How?

7. Do you think that the University has adequate computer equipment for the implementation of distance learning?

- ❑ yes
- ❑ no
- ❑ cannot answer

8. What prevents the introduction of effective distance learning at university?

- ❑ students do not have the appropriate computer skills
- ❑ teachers do not have the appropriate computer skills
- ❑ poor organization of distance learning at the university
- ❑ limited teachers' time to prepare e-learning materials
- ❑ fear of the new
- ❑ other (please, specify)

9. What, in your opinion, are the advantages of distance learning technologies (multiple choice is allowed)?

- ❑ individualization of learning
- ❑ increased amount of educational material
- ❑ new learning opportunities
- ❑ withdrawal from reproductive teaching methods to creative methods
- ❑ greater use of information and communication technologies
- ❑ other (please, specify)

10. What are the main risks during the introduction of distance learning?

11. What measure can improve your distance learning?

12. What course are you studying at?

- ❑ I
- ❑ II
- ❑ III
- ❑ IV
- ❑ V

Annex B

Questionnaire for faculty members

1. What was your first reaction to the introduction of distance learning?
   - ❑ positive
   - ❑ positive rather than negative
   - ❑ negative rather than positive
   - ❑ negative
   - ❑ very negative
2. Do you think Ukrainian society is ready for the introduction of distance learning?
   - ❑ yes
   - ❑ no
   - ❑ not ready to answer
3. Do you have a home computer, laptop, tablet?
   - ❑ yes
   - ❑ no (if you answered "no", proceed to question № 5)
4. Do you have Internet access at home?
   - ❑ yes
   - ❑ no
5. Do you know the regulations in the field of distance learning?
   - ❑ yes
   - ❑ no
6. Are you competent in distance learning technologies?
   - ❑ yes
   - ❑ no
   - ❑ difficult to answer
   - ❑ other (please, specify)
7. Do you think that the existing organization of distance learning takes into account the teachers' interests?
   - ❑ yes
   - ❑ no
   - ❑ other (please, specify)
8. Do you think that computer equipment at the university meets the requirements for the introduction of distance learning?
   - ❑ yes
   - ❑ no
   - ❑ other (please, specify)
9. What prevents the introduction of effective distance learning at university?
   - ❑ students do not have the appropriate computer skills
   - ❑ teachers do not have the appropriate computer skills
   - ❑ poor organization of distance learning at the university
   - ❑ limited teachers' time to prepare e-learning materials
   - ❑ fear of the new
   - ❑ other (please, specify)
10. What, in your opinion, are the advantages of distance learning technologies (multiple choice is allowed)?

- ❑ individualization of learning
- ❑ increased amount of educational material
- ❑ new learning opportunities
- ❑ withdrawal from reproductive teaching methods to creative methods
- ❑ greater use of information and communication technologies
- ❑ other (please, specify)

11. What, in your opinion, are the main risks during the introduction of distance learning?

12. Your position

- ❑ Head of faculty
- ❑ Head of department
- ❑ professor
- ❑ associate professor
- ❑ senior lecturer
- ❑ assistant

13. Work experience

- ❑ under 5 years
- ❑ 6 – 10 years
- ❑ 11 – 15 years
- ❑ 16 – 20 years
- ❑ more than 20 years

14. Gender

- ❑ male
- ❑ female