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TRENDS IN THE DEVELOPMENT OF DISTANCE LEARNING TECHNOLOGIES

Abstract. The article analyses the peculiarities of the introduction of distance education in Ukraine and the prospects for its development in the national educational space. The methodological features of the introduction of distance education in the context of the competence approach are considered. The object of research is the development of distance education in Ukraine. The article examines global trends in the development of the world education system, analyses the main milestones in the introduction of distance and blended education, identifies key stakeholders in distance learning and their goals, and focuses on the need to develop new didactic tools, in particular, smart technologies and smart manuals for an effective distance learning system. It is proposed to start this work with the development of the concept of a smart textbook and the design of relevant training blocks. It is explained that in the modern world this is impossible without continuous professional development, because everything around us is constantly improving and scientific and technological progress is constantly moving forward. And the same technology, on the one hand, guarantees quality training with the participation of top-level professional teachers, on the other hand, adjusts the teaching methodology depending on the level of students' training and their psychological characteristics revealed in previous tests. third, the correction of teaching methods. Learning takes place at home, on a computer, at a time convenient for the student. It has been determined that distance education is the technology of the future. It can be used in any educational system to fulfil a wide range of educational, training, upbringing and personal tasks. For this reason, new achievements in distance education need to be developed and implemented. It is even possible that in the future this technology will replace existing schools, universities and other educational institutions. The following methods were used in this study: theoretical analysis of educational and methodological literature on the organisation of distance learning and the use of smart technologies to improve the efficiency of the educational process.
Key words: higher education; adaptability; interaction of exogenous factors; military actions; distance and online learning; environmental changes; crisis situations; education technologies, variable education.

Problem statement. The rapid development of distance education has led to the emergence of various educational programmes and systems, as well as distance learning environments and platforms. One of the most important steps in providing distance learning in educational institutions is to choose a direction for distance learning. A distance learning platform is software that enables distance learning and focuses on creating and managing educational content. It contains the necessary tools for three main users (teachers, students and administrators) [6]. Therefore, the distance education platform of the educational services system is one of the main elements that connect students, teachers, management and parents.

The analysis of current research shows that developed countries pay considerable attention to the development of education, and are rapidly joining the competition for creating their own intellectual potential that will ensure the continuity of their sustainable development and independence.

The purpose of this article is to analyse the main milestones in the development of distance education, identify the key stakeholders of distance learning and their goals, and focus on the need to develop new didactic tools for an effective distance learning system.

Presentation of the main material. There are many platforms offering distance education around the world. They all fall into two important categories: open source, free, and closed source, paid. Teachers often use a virtual classroom for distance learning.

This is an online course organised for the purpose of communication (learning) between participants of the distance education system. A school website is the only information and educational space that unites all stakeholders. After all, it performs an informational function and unites the activities of students, teachers and parents. It contains school events and news, documents about the school's activities, photos and videos, interesting advice from doctors and psychologists, and useful links.

The main types of information services are used in e-learning: Internet resources (videos, websites, information and search engines); hypertext environment; e-mail, data transfer; conferences; Internet conferences; online presentations [2].

For more practical work, teachers use various technological platforms to communicate during distance learning. It should not be forgotten that with the introduction of distance learning, many new words have entered the professional vocabulary of teachers.

One of them is chat. Chat is an opportunity for online communication in real time. There are different types of chat: text, audio, voice and video chat. Text messaging is common at school. One of the forms of communication in online education is email, an Internet service that allows you to send plain text or encrypted messages in plain text and other formats (applications, video, graphics, sound). The email format is used for communication between teachers and students, as well as between students. Teachers often use this tool to communicate with parents. Messengers, such as Facebook, Viber, Telegram, Skype and other messengers, allow students, teachers and parents to communicate through messages. You can create closed groups, discussions, communities and discuss topics, issues and problems [23].

Video conferencing is an important part of education today. Video conferencing is a simultaneous two-way online communication. Consultations are held at a specific time and date. Video conferencing is one of the modern methods of communication that allows teachers and students to study remotely, i.e. work remotely.

Particularly noteworthy is the Moodle platform; a dynamic, modular, object-oriented learning environment with a course management system, a virtual learning environment or the learning space itself. Many learning materials are designed for interaction between teachers, students and school administrators. On this platform, you can upload information in various formats (videos, presentations, texts, web pages), you can also conduct research and tests for students, students can complete assignments and upload relevant files.

The most popular Moodle tools used in literature courses are: wikis; discussion forums; review log; data transfer; calendar of events; news and announcements; messaging; online testing [1].

Google Classroom is a popular platform where teachers can work. Google Docs is a service that connects Google Drive with Gmail and allows online learning using video, text, and graphics [3]. This platform provides teachers with access to manage, administer, grade tests, and view practice results. It helps you create and organise assignments, grade, comment, and organise effective communication with students during real-time or remote learning. Thanks to the Classroom platform, you can organise project work, flipped learning and distance learning. Access to this software is possible after user registration and creation of a standard Google account. With Google Classroom, users can create study groups or participate in existing courses. The number of study groups created by the teacher and the number of students enrolled are not limited. Functional characteristics of the site:

- invite students to classes;

- invite teachers to cooperate in the created class;

- contains general data on the organisation of the educational process: names of subjects, number of classes, etc;

- posting educational materials for students during classes, including videos (YouTube or videos from your own file storage) or links to relevant Internet resources;

- posting announcements or general news about a relevant educational topic or group;

- a survey for students (all or selected), showing general statistics of responses and an overview of detailed reports or responses from individual students;

- give students (all or selected) detailed, late homework assignments for the whole class or for individual subjects. During distance learning, a student may:

– attend classes by invitation or with a key received from the teacher or another student in the study group;

– check the study materials sent by the teacher

– look through the announcements and complete the teacher's assignments. Please leave any comments below.

– to read the assignments prepared by the teacher and the deadlines for submitting materials

– to receive notifications when assignments are returned for review;

Zoom is suitable for online meetings and video conferencing in the classroom. The platform is suitable for groups and individuals. They have access to an interactive whiteboard that they can show to students and quickly and easily turn the screen into a whiteboard. Communication through literature helped teachers identify the platforms they used to communicate online. These included: WebMeet, Skype, WebTutor, Microsoft Teams, Claroline, Dokeos, OpenACS, Sakai and other networks. We cannot ignore ClassDojo, a simple tool for real-time classroom assessment. Both the teacher and the students in his class register on this platform. Each has personal access to a profile code, and parents can also access their children's profiles. The student is required to collect points for tasks completed with the teacher, and parents can monitor their children's progress in each lesson.

Classtime is a platform for creating interactive educational applications that improve the learning process and implement an individualised approach. The following platforms help teachers prepare for classes: EdEra, Prometheus. Here you can listen to online lectures, participate in regular trainings, do practical work and answer exam questions. The versatility of the programmes helps to increase students' interest in the course topics. You can create your own websites to organise courses and share your successes. This programme helps to unite teachers from different regions of Ukraine to optimise the learning process.

In this sense, the YouTube channel is interesting. It is one of the most visited websites in the world, and since it is a completely free tool, it has great potential to be used as an additional source of information for on-site training. Finally, YouTube allows you to browse and watch films, videos, cartoons, studies and their analyses, biographies of authors and researchers, gaming, and much more. A teacher helps students with a survey after a police video [10].

Kahoot is an online platform for creating quizzes, quizzes and surveys. The website is designed for educational purposes. Students can complete tasks using devices with internet access. When creating activities on the platform, teachers can use examples, visual resources and video clips that engage students of all ages. Students can access the resources through the app and after entering a PIN provided by the teacher. The Kahoot platform allows you to create different types of polls. The first is a conversation. Here, you can create a discussion question and provide four answer options. This type of observation is most effectively used in the parenting area. The second type is questioning. The goal is to find out what the participants think.

The number of questions in this category of training is unlimited, and the questions can be answered - tests (quizzes) are available on the Kahoot platform sites. A question in this category has four possible answers. Both options are correct. This version of the questionnaire is the most common among school teachers [1].

The LearningApps platform has created a variety of teaching materials and interactive methods. In LearningApps, you can use a large database of tasks from teachers from different countries and adapt them to your needs or adapt similar or completely new tasks for your lessons; On this site, you can do puzzles, tests, riddles and similar tasks.

"Rebusy №1" is an interesting and easy-to-use online platform in Ukrainian that allows you to create your own puzzles or jigsaw puzzles on the site. Notebooks are very useful in the classroom, as solving puzzles helps students train their memory and spelling, develop thinking skills, memorise new words, new things, etc. One of the many visualisation techniques teachers use is mind mapping. This is a type of diagram that shows words, ideas, tasks, or other objects organised around key words or ideas. Mind maps (intelligent maps, mind maps, flashcards, mind maps) help to make clear and understandable notes, establish logical connections between concepts, memorise, etc.

Padlet.com is a virtual whiteboard where you can create separate columns by posting text, information, hyperlinks, images, emotions, audio, and video. Students can post short videos or messages and hide them on a virtual whiteboard where students and teachers can see information about the video.

A QR code is a graphic image that contains information or a link to a website. QR codes provide direct access to encrypted data. To do this, use an app on your smartphone or other mobile device. It is used to enhance QR codes for tasks, assignments, sheets, etc. As practice shows, the use of various learning tools in distance learning facilitates the assimilation of material and enriches knowledge.

Microsoft Teams is the Microsoft Office 365 teamwork platform that brings together the people, content, and tools your team needs to work more effectively. It brings everyone together in a collaborative work environment that includes meeting chat, file sharing, and business applications.

Benefits of using in the educational process: all tools are free; no installation required; supports all operating systems and client software; ability to work synchronously or asynchronously with students to edit, correct and comment on documents; ability to freely manage the business process; interactive viewing of student work; creation of a shared database; publishing work with limited rights (for individual users only); quickly collect and analyse data, conduct research, conduct tests, and more.

Google Forms (creating questionnaires, tests, surveys). With this tool, you can create a survey or questionnaire in a few minutes: create a form, prepare tasks, select the type of answer. The teacher can delve deeper into the topic and find out what students have learnt by analysing their work. In addition, Google Forms can facilitate collaboration and communication with parents. At the beginning of the school year, a home educator can ask parents to fill out a questionnaire that answers such questions as phone numbers, work, special needs of the student (length of stay in the group, diet, illness, etc.) [2].

Google Slides application. The application allows you to work with files on Android devices: create, edit and share presentations while collaborating with other users; works without an Internet connection; add and reply to comments; add images, change the location, format text, shapes, etc.

Coursera offers its students hundreds of free online courses in various fields, after which they receive a certificate of completion. Coursera has partnered with universities around the world to offer online courses that are offered by these educational institutions. The courses are free, but with a self-proven certificate, there are paid certificates available for select courses. During the course, the student is required to watch weekly video lessons, read recommended articles and complete homework. Some courses have Ukrainian subtitles [3].

After switching to distance learning, every teacher faces the question of how to measure student performance by assessing the work, effort and learning of each student. Assessments in distance learning can be conducted on various online platforms.

A test is a process of analysing the effectiveness of your knowledge in real life and in real time and can be taken for free on various platforms. After creating a quiz (a question and four

possible answers, one of which is correct), the teacher asks the students to solve it within a certain time. The number of questions asked to students is unlimited. When choosing an answer, the student immediately checks whether he or she has answered the question correctly. At the end of the term, the teacher receives the results from the participants in the assessment process. You can hold a competition on this platform. Your goal in class is to solve a problem quickly and correctly. The participants who solve this task will get the most points [3].

Another platform used to assess student learning in the classroom is Moodle. It is also possible to take tests by opening an exam, the teacher can set up different options for work: during the exam, the student is asked a question, the questions are assigned immediately, and the student chooses the order of answers (answer the easiest question, then ask the next one). At the end of the test, the student sees the result after trying the options with the correct answer. You can also write, for example, a definition or a short essay on this platform.

Research is an important part of learning. In these courses, children learn to reflect on the actions of literary characters, to understand what the author wants to convey to the reader, and most importantly, to express their opinions correctly, clearly and precisely, to discuss them and to be able to defend and uphold their point of view.

The research is conducted in video classes with the participation of the whole class. Teachers on the platform sometimes create separate rooms for students and hold group discussions with them, while the other half participate in other activities. For example, if a teacher uses Zoom for video communication during class, they will create a special room where they can invite several students to discuss the material they are working on. Meanwhile, the other half of the class uses cameras placed in front of the monitor and completes written assignments. After completing the task, students take turns, those who answered orally work on the written work, and those who answered in writing can participate in a conversation with the teacher [5].

When writing an essay, students can complete the task synchronously with the camera. To do this, class members need to turn on their cameras through a platform where the teacher communicates with students via video, and the teacher displays selected questions on the screen. The students write down the information in a notebook and provide answers. At the end of the lesson, the children take a photo of what they have written and send it to the teacher to record. Language teachers write essays asynchronously, during which the essay must be written and submitted to the teacher. For example, in addition to written assignments, during written work, the teacher offers students to complete tasks on an interactive platform, also in the classroom. Students can usually view their results on this platform [5].

When creating works, teachers try to invite students to do something new and interesting so that students are interested in their work and appreciate their efforts and creativity. This can be as simple as creating a social media page for an author or literary hero where you talk about them, highlight their characteristics, use quotes from the work, etc. Being a hero can be fun. Students enjoy creating a story or picture book and, after reading the story, have to represent the events in the story in pictures.

Poetry and prose memorisation tests should be administered online via Zoom, classroom, Skype, or other online resources. You can ask students to record themselves reading a poem and send it to the teacher for review or upload the video to Google Drive, Classroom, or any other platform the teacher uses in the classroom. We have seen in practice that such a task is very difficult to check in distance learning, because many students download and read poems on the screen. Sometimes the teacher can ask the student to read the poem with their eyes closed, but this often confuses the student and makes it difficult to repeat the poem. When watching a song in class, you can ask the student to sit off-screen, for example, in the middle of the room, and then listen to the lyrics, etc. [2].

The self-assessment form is considered effective for distance learning. At the end of the lesson, there will be a reflection. To do this, the teacher makes a list of questions that each student must answer and gives the answers to the teacher. Students can be assessed according to the following criteria: 15 students took an active part in the class; presented successful proposals that

were discussed in class; supported the class and encouraged them to work; others had an idea that they liked; summarised the opinions of others well; fully answered the questions. For each task, the student is given a score from zero to two. After assessing each criterion, the student adds up the total score. The teacher changes the student's self-assessment: he or she can add or subtract points. This means that each student knows the level of participation in the course and the assessment of their work at each stage of learning. Students can complete written work in a notebook or word processor.

After completing the task in asynchronous mode, children send it by email or via Viber, Facebook or other social networks where they work and communicate with teachers. To assess each student's performance, the teacher makes notes, observations and comments on the task and returns them to the student so that they understand not only the grade but also why the grade was given. other First analysis. and evaluate their work. The easiest way to do this is to use the preview option in the Microsoft Word control panel. Many teachers record lessons in each student's electronic diary, which makes it easier to communicate not only with the student but also with his or her parents [4].

We recommend teaching students about Internet etiquette and encouraging them to follow the rules of communication and interaction on the Internet and to take responsibility for their actions on the Internet.

The institute can organise the educational process by introducing distance learning methods, using technical means of communication available to the participants of the educational process. When introducing distance learning, it is important to pay attention not only to the availability of equipment and Internet access for teachers and students, but also to the details of primary, elementary and secondary education, as the level of competence of the Primary school will be independent of the students. learning opportunities are lower than those of primary and secondary school students [6].

The reception of learning materials is provided by synchronous transmission of visual, acoustic, graphic and textual information, distance teaching of academic subjects during training, refresher and advanced training courses, distance counselling (participants communicate with delays via e-mail, forums, social networks) or asynchronously (participants simultaneously use the distance learning system and/or participate in a webinar, video conference, seminar, conversation, etc.

The organisation of the educational process in the institution should ensure regular and meaningful interaction of distance education institutions, using individual and collective forms of educational and cognitive activities of students and self-control during learning.

The use of smart technologies in the modern educational process. On the one hand, smart technologies provide a certain "presence effect", on the other hand, they significantly accelerate the exchange of content, change its quality and the ability to communicate between participants. It has been proven that smart education is based on smart technologies. The programme should be pedagogically designed to take into account the individual educational trajectory and the possibility of combining different educational programmes. "In the context of smart learning, special attention should be paid to the management of educational content and resources. This requires the constant adaptation of educational resources, such as websites and blogs, online vacancies, etc. They must be filled with information. To ensure the flexibility of developing and using educational content, academic information management should be introduced [3].

"The pedagogical component of intellectual education, according to Professor M. Kademia, is a combination of educational outcomes and educational methods and technologies used to implement them" [4]. These methods and technologies require educational tools and intelligent and personalised information technologies.

"An obligatory part of the educational process is the management of knowledge, skills and competences, i.e. the management of their effectiveness." The computer greatly simplifies knowledge testing, as the student answers the questions using the testing software, and after the test

is completed, the computer automatically provides one reasonable grade. This makes the work of teachers and the process of testing easier and more enjoyable, relieves students of the fear of exams and prepares them for self-examination before entering university. Special programmes can be used for self-control, for statistical evaluation of monitoring results and for creating a system of academic performance registration [3].

"Education experts believe that the current generation is very different from the previous one". This is what they call the current generation. The modern generation, whose main feature is active mobility and constant presence in social life. the need for networks and constant access to the Internet. For this generation, getting information "online" is quite understandable and more interesting. Attempts to teach this generation using the traditional teaching model quickly lead to students losing interest in the subject and teachers becoming completely uneducated. This problem can be solved with the help of an updated concept of online education, which should include, among other things, the continued use of Generation Z as an important part of the educational process [7].

The use of intelligent technologies in the educational process has significantly changed the learning process, so the following positive features of these technologies can be observed: the possibility of using different fields in education; significantly improved information collection; the learning process becomes more interesting and accessible; an innovative approach to creative self-realisation; the possibility of teaching foreign languages; training anywhere and anytime; the ability to obtain the necessary information.

"The education system now offers a significant number of technologies and educational tools that can be used to provide education at a high enough level to meet the challenges of modern society." One of the criteria for the quality of the education system is information and technological progress. There is no denying that SMART technologies are pioneers in this field. New, advanced technologies called interactive are used in the educational process. A new form of presentation of materials using interactive technologies (interactive tablets, interactive screens) is a presentation that is created directly during the lesson and is created "here and now", as opposed to slide presentations [2].

With such a smart presentation, it is possible not only to present educational materials during classes, but also to write written comments on the images on the screen, save them on a medium and pass them on to students for study. Complex and abstract concepts can be conveyed in a simple and accessible form. The use of SMART technology in the educational process provides undeniable advantages for all disciplines of learning and means a transition from the transfer of old reproductive knowledge to a new, creative form of learning using innovative methods, forms and means. SMART methods can be used in many types of learning to develop students' individuality. The model of the new SMART company is based on creating an intelligent, technologically advanced and comfortable environment for people with the help of modern IT and organisational systems [8].

СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

[1] Горбатюк,О., Поліщук,С. (2022). Особливості функціонування закладів вищої освіти під час війни: очна та дистанційна форми освіти, їх ключові переваги та недоліки. Сучасні інформаційні технології та інноваційні методики навчання впідготовці фахівців: методологія, теорія, досвід, проблеми, 66, 5–13. https://doi.org/10.31652/2412-1142-2022-66-5-13

[2] Крамаренко,І., Корнішева,Т., Сілютіна,І. (2022). Адаптація дистанційного навчання увищій школі до умов воєнного стану. Перспективи та інновації науки, 4(9), 192–205. https://doi.org/10.52058/2786-4952-2022-4(9)-192-205

[3] Кричківська, О., Білоус, І., Дем›янюк, А. (2022). Дистанційна освіта в надзвичайних умовах та кризових ситуаціях. Перспективи та інновації науки, 8(13), 99–108. https://doi.org/10.52058/2786-4952-2022-8(13)-99-108

[4] Aretio,G.L. (2021). COVID-19 y educación a distancia digital: preconfinamiento, confinamiento y posconfinamiento. RIED-Revista Iberoamericana de Educación a Distancia, 24(1), 9–32. https://www.redalyc.org/articulo.oa?id=331464460001

[5] Gamage,K.A.A., Pradeep,R.G.G.R., Najdanovic-Visak,V., &Gunawardhana,N. (2020). Academic Standards and Quality Assurance: The Impact of COVID-19 on University Degree Programs. Sustainability, 12(23), Article 10032. https://doi.org/10.3390/su122310032
[6] Salama,R., &Hinton,T. (2023). Online higher education: current landscape and future trends. Journal of Further and Higher Education, 47(7), 913–924. https://doi.org/10.1080/0309877X.2023.2200136
[7] Torun,D.E. (2020). Online Distance Learning in Higher Education: E-learning Readiness as a Predictor of Academic Achievement. Open Praxis, 12(2), 191–208. https://dx.doi.org/10.5944/openpraxis.12.2.1092
[8] Turan,Z., Kucuk,S., &Karabey,S.C. (2022). The university students' self-regulated effort, flexibility and satisfaction in distance education. International Journal of Educational Technology in Higher Education, 19, 35 https://doi.org/10.1186/s41239-022-00342-w

ТЕНДЕНЦІЇ РОЗВИТКУ ТЕХНОЛОГІЙ ДИСТАНЦІЙНОГО НАВЧАННЯ

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Анотація. У статті проаналізовані особливості впровадження дистанційної освіти в Україні та перспективи її розвитку у вітчизняному освітньому просторі. Розглядаються методичні особливості запровадження дистанційної освіти в контексті компетентнісного підходу. Об'єкт дослідження – розвиток дистанційної освіти в Україні. У статті розглядаються глобальні тенденції розвитку світової системи освіти, проаналізовано основні віхи впровадження дистанційної та змішаної освіти, виявлені ключові стейкхолдери дистанційного навчання та їх цілі, а також акцентовано увагу на необхідності розвитку нових дидактичних засобів, зокрема, smart-технологій і smart-посібників для ефективної системи дистанційного навчання. Цю роботу пропонується розпочинати з розробки концепції smart-посібника та проектування відповідних навчальних блоків. Зясовано, що сучасному світі це неможливо без постійного підвищення кваліфікації, адже все навколо постійно вдосконалюється і науково-технічний прогрес невпинно йде вперед. І ця ж технологія, з одного боку, гарантує якісне навчання за участю викладачів-професіоналів вищого рівня, з іншого – коригує методику викладання залежно від рівня підготовки студентів та їх психологічних особливостей, виявлених у попередніх тестах. по-третє, корекція методів навчання. Навчання відбувається вдома, за комп'ютером, у зручний для учня час. Визначено, що дистанційна освіта – це технологія майбутнього. Його можна використовувати в будь-якій освітній системі для виконання широкого кола освітніх, навчальних, виховних і особистісних завдань. З цієї причини нові досягнення дистанційної освіти потребують розвитку та впровадження. Можливо навіть, що в майбутньому ця технологія замінить існуючі школи, університети та інші навчальні заклади. У представленому дослідженні використано наступні методи: теоретичний аналіз навчальної та методичної літератури з організації дистанційного навчання та використання smart- технологій для підвищення ефективності освітнього процесу.

Ключові слова: вища освіта; адаптивність; взаємодія екзогенних факторів; воєнні дії; дистанційне та онлайн-навчання; зміни середовища; кризові ситуації; технології освіти, змінна освіта.

References (TRANSLATED AND TRANSLITERATED)

[1] Aretio,G.L. (2021). COVID-19 y educación a distancia digital: preconfinamiento, confinamiento yposconfinamiento. RIED-Revista Iberoamericana de Educación a Distancia, 24(1), 9–32. https://www.redalyc.org/articulo.oa?id=331464460001 [in English].
[2] 2. Gamage, K.A.A., Pradeep, R.G.G.R., Najdanovic-Visak,V., &Gunawardhana,N. (2020). Academic Standards and Quality Assurance: The Impact of COVID-19 on University Degree Programs. Sustainability, 12(23), 10032. https://doi.org/10.3390/su122310032 [in English].

[3] Horbatiuk,O., &Polishchuk,S. (2022). Osoblyvosti funktsionuvannia zakladiv vyshchoi osvity pid chas viiny: ochna ta dystantsiina formy osvity, yikh kliuchovi perevahy ta nedoliky [Features of the functioning of institutions of higher education during the war: face-to-face and distance forms, their key advantages and disadvantages]. Modern informational technologies and innovative methods in professional training: methodology, theory, experience, problems, 66, 5–13. https://doi.org/10.31652/2412-1142-2022-66-5-13 [in Ukrainian]

[4] Kramarenko,I., Kornisheva,T., &Siliutina,I. (2022). Adaptatsiia dystantsiinoho navchannia uvyshchii shkoli do umov voiennoho stanu [Adaptation of distance learning in higher school in the conditions of martial law]. Prospects and innovations of science, 4(9), 192–205. https://doi.org/10.52058/2786-4952-2022-4(9)-192-205 [in Ukrainian].

[5] Krychkivska,O., Bilous,I., &Demianiuk,A. (2022). Dystantsiina osvita vnadzvychainykh umovakh ta kryzovykh sytuatsiiakh [Distance education in emergency and crisis situations]. Prospects and innovations of science, 8(13), 99–108. https://doi.org/10.52058/2786-4952-2022-8(13)-99-108 [in Ukrainian]

[6] Salama,R., &Hinton,T. (2023). Online higher education: current landscape and future trends. Journal of Further and Higher Education, 47(7), 913–924. https://doi.org/10.1080/0309877X.2023.2200136 [in English].

[7] Torun,D.E. (2020). Online Distance Learning in Higher Education: E-learning Readiness as aPredictor of Academic Achievement. Open Praxis, 12(2), 191–208. https://dx.doi.org/10.5944/openpraxis.12.2.1092 [in English].

[8] Turan,Z., Kucuk,S., &Karabey,S.C. (2022). The university students' self-regulated effort, flexibility and satisfaction in distance education. International Journal of Educational Technology in Higher Education, 19, 35 https://doi.org/10.1186/s41239-022-00342-w [in English]