ONLINE RESOURCES FOR TECHNICAL SUPPORT OF DISTANCE LEARNING: ADVANTAGES AND DISADVANTAGES IN THE IMPLEMENTATION SYSTEM

RECURSOS ONLINE DE APOIO TÉCNICO À EDUCAÇÃO A DISTÂNCIA: VANTAGENS E DESVANTAGENS NO SISTEMA DE IMPLEMENTAÇÃO

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Abstract. In the context of a full-scale war, educators are implementing innovative adaptation strategies to the new realities by developing and applying distance learning models. This article aims to investigate the technical support features for distance learning methodology using online tools. The study employed general scientific methods of cognition, including analysis, synthesis, comparison, abstraction, concretisation, generalisation, and formalisation. The study analysed existing models of distance education and their practical implementation in educational institutions. Additionally, the study addressed the issue of technical support for distance learning. It showed that the quality of distance learning depends on the teacher's digital competencies in the online process. Additionally, the research found that this trend enhances the educational experience of learners and stimulates their motivation to learn. Furthermore, careful planning of the educational process and a reasoned selection of tools were found to make distance learning quite effective. The study has demonstrated the effectiveness of distance learning as an innovative educational technology, particularly in crises. The practical significance of these findings lies in their potential to optimise the education system by improving existing methods and developing new algorithms for distance learning.

Keywords: distance learning models, adaptation of the educational process, digital competences, multimedia, digitalization

Resumo. No contexto de uma guerra em grande escala, os educadores estão a implementar estratégias inovadoras de adaptação às novas realidades, desenvolvendo e aplicando modelos de ensino à distância. Este artigo tem como objetivo investigar os recursos de suporte técnico à metodologia de ensino a distância utilizando ferramentas online. O estudo empregou métodos científicos gerais de cognição, incluindo análise, síntese, comparação, abstração, concretização, generalização e formalização. O estudo analisou modelos existentes de educação a distância e sua implementação prática em instituições de ensino. Adicionalmente, o estudo abordou a questão do suporte técnico para o ensino a distância. Mostrou que a qualidade do ensino a distância depende das competências digitais do professor no processo online.

Além disso, a pesquisa descobriu que esta tendência melhora a experiência educacional dos alunos e estimula a sua motivação para aprender. Além disso, constatou-se que o planeamento cuidadoso do processo educativo e uma seleção fundamentada de ferramentas tornam o ensino à distância bastante eficaz. O estudo demonstrou a eficácia



do ensino à distância como uma tecnologia educacional inovadora, especialmente em situações de crise. O significado prático destas descobertas reside no seu potencial para optimizar o sistema educativo, melhorando os métodos existentes e desenvolvendo novos algoritmos para o ensino à distância.

Palavras-chave: modelos de ensino a distância, adaptação do processo educativo, competências digitais, multimédia, digitalização

1. INTRODUCTION

The intensive transition to the information society significantly changes the state of education and its status. The new society requires new approaches that would meet the needs of the "consumer and producer of material and spiritual goods". Therefore, the issue of introducing the latest learning technologies in higher education is becoming acute. Optimisation of the modern education system in Ukraine based on the intensive development of information technologies seems unrealistic without considering and implementing the distance learning system (hereinafter - DLS), which is positioned as an evolutionary stage between development and adaptation of education to modern culture.

The analysis of studies by several scientists (Red'ko, V. H., 2012; Banados, E. A., 2006) a researchers shows that today the following aspects are represented in higher education institutions:

- a) traditional forms of education;
- b) forms of education that include elements of DL;
- c) blended learning;
- d) online learning.

It should be noted that the use of blended learning, which is defined as a combination of learning technologies with the help of a flexible approach to education is well-spread. It involves performing tasks on the Internet using methods that can improve student results and/or save learning time (Buhaichuk, K. L., 2016).

Blended learning is identified as a process of actively acquiring knowledge, skills and abilities implemented at different types of educational institutions within formal education. At the same time, certain components of the process are carried out remotely using the potential of information and communication technologies and technical learning tools. This approach allows accumulating available educational material, controlling, and ensuring interaction between the subjects of the educational process and during which there is self-control of the pupil (student) in terms of time, place, routes and pace of study (Smulson, M. L., 2008). Its implementation involves structuring and organizing a large amount of educational information in electronic resources (electronic copies of textbooks, dictionaries, reference books, teaching guidelines and manuals, multimedia complex, computer simulators, online projects, assignments for students' independent work, tests, etc.), free access to it and its effective fast transfer. It is worth noting that in most HEIs, as evidenced by student and teacher surveys and our own work experience, the implementation of the blended learning form is a priority. Therefore, the basis of the proposed research is the integration of traditional forms of education and DL.

The purpose and objectives of the article are to analyze the features of distance learning, its advantages and disadvantages in the process of implementation in the system of higher education and to characterize the online resources that can be used to implement this form of education.



2. LITERATURE REVIEW

The issue of involving DL in the practice of HEIs is in the focus of modern scholars (Tsidelko, V., Yaremchuk, N., & Shvedova, V., 2006; Kukharenko, V. M., Rybalko, O. V., & Syrotenko, N. G., 2002; Andrushchenko, V. Lugovyi, V., 2008) A significant number of studies show that DL is rapidly breaking into the educational process of higher education institutions, ensuring the active use of ICTs that open up prospects for access to information, adapting to the individual needs of students of higher education institutions.

In the modern scientific literature, we can observe different interpretations of DL. Here are some of them: it is a special system of education, "in which there is a combination of information (information and computer) learning technologies with communication technologies (they include, along with traditional means of communication, computers, local and global networks, e-mail, the Internet)" (Smulson, M. L., 2008); it is an open and accessible education for everyone that uses modern information technology and mass communication as a technological component (Tsidelko, V., Yaremchuk, N., & Shvedova, V., 2006). DL is a process of educational activity involving the potential of modern information technologies and providing students with independent searching activity using materials from electronic databases, adaptation of projects and methods, continuous process of communication interaction between the teacher and students, application of differentiation of the educational process.

Scientists (Samoilenko, O. V., 2013; Andrushchenko, V. Lugovyi, V., 2008) insist that a distance course differs from a blended/hybrid course by the total number of online classes in relation to face-to-face communication. In the former case, at least 80 per cent of the course content is delivered online, while blended/hybrid learning is characterised by a range of 30-80 per cent. The way and structure of the learning environment is not the only difference between blended and distance learning and traditional face-to-face learning; these modes of learning also redefine traditional educational roles and provide different learning opportunities. It should be noted that DL has evolved from a static, print-based delivery medium to today's interactive multimedia learning environments (Samoilenko, O. V., 2013). Web-based education is fast becoming a popular alternative to traditional face-to-face classroom-based education due to limitations on student's time and ability to travel to and from class (Andrushchenko, V. Lugovyi, V., 2008).

Scientists (Pochynkova, M., 2008; Pekhota, O. M., & Tikhonova, T. V., 2013; Bykov, V., & Ovcharuk, O., 2014) argue that DL has several features, in particular:

- flexibility to learn at the same time is convenient for him/her, the availability of its unregulated segment in a convenient place;
- modularity based on the formation of a curriculum from independent training coursesmodules;
- parallelism which provides training that is combined with a professional activity;
- completeness of information access allowing simultaneous entry of many users to multiple sources of educational information;
- digitalisation of the learning space creating a format of concentrated and unified presentation of educational information and multi-access to it;
- individualisation of the learning process involving the formation of knowledge and skills at individual speed;
- cognitive orientation expressed in organisation, ability to work independently and mastery of digital communication skills;
 - diagnosticity assessing professional qualities, building an appropriate sociopsychological portrait to choose the most effective teaching tools;
 - motivation develops interest in relevant knowledge for its future application in



- career development;
- humanness implies human-centredness, creating a favourable atmosphere for acquiring knowledge and developing creative abilities;
- social equality creates fair opportunities for all students, regardless of various factors:
- internationality includes export and import of global innovations in the process of educational services.

3. RESULTS

The main features of DL form the prerequisites for converging learning with practice, actively create access to multiple learning sources available on the Internet; facilitate quick checking of completed tasks, and above all, provide an opportunity to study abroad with minimal financial costs.

DL performs a number of tasks, namely: increasing the role of the student in the learning process; increasing the amount of available information, the possibility of virtual communication with teachers, specialists; solving problematic tasks through the introduction of ICT, multimedia component; comfortable learning conditions; a large number of project participants living in different cities and countries (Kurlyand, Z. N., 2007; Pattnaik, A., 2023). The outlined tasks allow students to self-realize, establish close cooperation with the teacher and classmates, form the LC of a future linguist specialist, provided that they constantly perform practical work of high quality, study scientific, educational and methodological sources, dictionaries and reference books, select audio and video information.

DL models are represented by the following groups:

- 1. External study is for students who cannot attend an educational institution for certain reasons.
- 2. University education allows students to study part-time/distance learning.
- 3. Education based on assimilation cooperation of several higher education institutions.
- 4. Education in special institutions of part-time and distance learning based on multimedia support.
- 5. Autonomous learning systems operating through television and radio programmes, additional publications.
- 6. Informal form of integrated learning based on self-education programmes.

The analysed differentiation of e-learning combines elements of various forms of learning based on multimedia systems and ICTs providing equal conditions for studying, receiving information and assessing knowledge. The variety of proposed forms also provides for the introduction of inclusive distance learning as an opportunity to provide free access to education for students with "special requirements of the learning environment based on creating free access to the educational process for them and providing special educational and rehabilitation support" (Kukharenko, V. M., Rybalko, O. V., & Syrotenko, N. G., 2002), that will help them to integrate into society as much as possible in the areas available to them, enable them to receive a quality education, develop professional competence, self-concept, assert themselves, become in demand and highly competitive.

The DL models are commonly used as two versions:

- asynchronous type of learning process, with forming groups within the same course and studying according to an individual curriculum. In this case, teaching and learning materials developed by the educational institution are used, and communication takes place through e-mail, forums, and wikis;
- synchronous learning ("joint work") means remotely separated higher education institutions where the process of communication interaction takes place in real time. At



the same time, such forms of work as discussions and seminars, online conferences are actively used. DL creates conditions for minimising face-to-face communication between a teacher and a student, providing for expanding the boundaries of students' self-education work with the involvement of online resources. The information and educational resources of both asynchronous and synchronous DL are placed on the university website (MOODLE platform) and are available to students and teachers, adapted for use. Their main components of such resources are the following:

- *course creation component* is an educational information system containing the following modules: file storage, electronic library, virtual laboratories, module for programming tests, etc;
- the DL administration functionality includes statistics modules for each teacher, student, as well as general organisational and management modules for organising the learning process;
- the communication component enables productive synchronous and asynchronous communication;
- adaptation tools create opportunities for dynamics depending on the specifics of the learning process;
- the system of checking competences creates optimal conditions for monitoring and controlling the level of students' training.

In particular, the component of creating a training course is filled with informative materials regarding the course objective, its structure and main tasks, the lecturer, the list of lectures and the main literature material in the discipline, distance learning and methodological complexes in the discipline, and test questions for self-control.

E-Learning is positioned as a set of modules, each containing substantially complete components with theoretical information, a list of control and practical tasks, instructions, and control tests. All practical materials are selected on a textual basis, which, as M. Pochinkova emphasizes, "allows to combine vocabulary-semantic and vocabulary-orthographic directions contribute to expanding the vocabulary and implementing spelling skills, promotes optimisation of speech culture, generates a strong interest in the subject contributing to the research of literacy, to mastering the elementary system of grammar" (Pochynkova, M., 2008). Potential of media resources, digitalised communication and graphic presentation of information about main and additional literature are mandatory. The DLC material, structured according to this principle, helps to organize the students' independent work: lecture abstracts are updated with the theoretical material that a student of universities can find by following the suggested links to web resources; tasks for practical classes help to prepare presentations, select video materials, etc.; graphic material summarises information data in an informative way being taught; a glossary allows a student to focus on terminology. The function of the supervisor is to check the submitted materials, evaluate them and put a grade in the electronic journal. The proposed model can be modified depending on the specifics of the subject (for example, for the discipline "Ukrainian dialectology" it is advisable to introduce a structural element - sound recording of the speech of people from different regions of Ukraine for the purpose of further analysis). Given the compact arrangement of the material, students can quickly find the information they need, monitor their progress, eliminate debts, and constantly supplement the materials submitted for examination.

The main indicators of the quality of knowledge gained in the process of DL are the following:

- a) indicator of the student's level of knowledge in linguistic disciplines;
- b) indicator of systemic competence;
- c) indicator of competence regarding the optimal allocation of resources;



- d) indicator of information competence, information interpretation skills;
- e) indicator of writing, listening and speaking functionality;
- f) assessment of personal responsibility;
- g) ability to work in a team, delegate knowledge and compromise.

The competence level of a learner in a linguistic discipline can be assessed offline and online; the results are recorded and accumulated in a special journal.

Among the functionalities of a DL system, we consider communication to have an important potential, which is usually implemented in the format of a chat, forum, or online conference. In general, this type of communication involves:

- a) communication with the head of educational process;
- b) information exchange in communication with students;
- c) a discussion forum, which aims to freely express points of view and ensure equality in the discussion;
- d) role-playing communication, which develops the ability to present original projects;
- e) reporting, which develops the ability to speak concisely and clearly and to prove a priority opinion.

Therefore, virtual educational communities, which are associations of individuals involved in the educational process with common interests and initiatives for educational purposes, are seen as particularly effective for implementing effective online communication of teachers. The process of communication is carried out using the capabilities of information and communication technologies following the current standards of virtual communication (Bykov, V., & Ovcharuk, O., 2014). The associations open up the potential for communication between future linguist specialists and students from different universities; implementation of online conferences. This form of communication requires a high culture of speech, ICT literacy, and the ability to present material to the audience.

The effectiveness of DL depends on the learning tools conventionally divided into online and classroom. The first group includes e-mail, the Internet, online conferences, telegraph, telephone, satellite, as well as graphical interfaces, rapid communication systems, active subscription channels, and chat rooms. The second group consists of educational electronic publications, specialised educational computer systems; educational media resources; and the global web.

Electronic editions for educational purposes are digitalised learning tools covering methodological, didactic and information and reference materials in the discipline, allowing them to be used comprehensively for both self-education and for the knowledge control (teaching and methodological recommendations for organizing students' independent work, performing term or diploma research, preparing for the final certification, etc.).

Computer systems for educational purposes is the potential of software tools allowing to differentiate the learning process, effectively diagnose errors; implement self-control of cognitive activity; reducing learning time due to the performance of complex calculations by a computer; demonstrating наочності; modelling and implementing laboratory and experimental studies and researches in a virtual reality; instilling decision-making skills.

Computer-based learning programs use a dialogue, which should give certain recommendations, explanations, hints, playing the role of a teacher. Learning becomes active, which is achieved by introducing a scenario of the corresponding actions into the program. Thus, simultaneously with the representation of educational material, it is necessary to effectively converge the student resource and the computer-based learning programme, which aims to maximise understanding of the material and intensify self-control and self-improvement. The outlined approach increases the motivation and determination of the



learning process, creating additional opportunities for using reference tools; making it possible to participate in online competitions, contests, etc (Pattnaik, A., 2023).

Two more peculiarities of computer tools in the DL system should be highlighted through the intensification of using the multimedia potential based on the outlined pedagogical concepts:

- 1. Documented experience should be emotionally coloured. This is facilitated by multimedia, i.e. a comprehensive representation of information using graphs, images, animation, stories with possible sound.
- 2. The hypertextual basis of the proposed material is developed.

The hypertext structure includes:

- material essence; free movement around the test (selection of the most relevant modification of the offered information);
- use of cross-references to facilitate the organization of feedback.

Hypertext is a "navigation" in the information field, allowing students to navigate through the text to find the information they need. This allows for optimal selection of the required material, including photos and videos, sound recordings, film excerpts, etc.

The variety of DL tools makes it possible to place the maximum amount of necessary materials on the teacher's webpage to help organize the student's educational activity in general (Smith, B., & Brame, C., 2014).

Distance learning can be implemented by involving online resources. Let's look at their characteristics (Table 1).

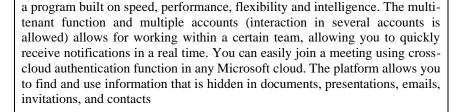
Table 1. Characteristics of distance learning involving online resources

I. Platforms for conferences using all-network communication: ZOOM a space for collective work, where individual users and groups can gather and solve educational problems. A meeting can be organized by any of the conference participants, delegating the right to other participants; all those who have been given a call (or identifier) to the conference. You can create a new conference every time, or use a permanent one **HANGOUT** a platform for quick messaging and video conferencing (developed by Google). The application enables communication in groups by providing webinars, classes and group communication. During a video conference, participants have the opportunity to display a computer screen by sharing an open window of the application. Features of platform are the following: simple design, preliminary scheduling of meetings; synchronization of conversations; usage as a phone call. The disadvantages of this platform are accessibility from G-Suite; functioning exclusively in a browser; only statuses are available online or offline: no feedback on delivered information SKYPE platform, supported by Microsoft Edge, Google Chrome, Safari and Opera, is free of charge and allows communication in the educational communication environment, who are simultaneously connected both by text and video. All Skype conversations are protected with industry standards using comprehensive encryption. The program's advantages include high-quality video calls, make voice calls, and send messages. The Skype browser version saves all conversations and chat histories. Another interesting feature is call recording, which works on the basis of the cloud and is stored for 30 days. When you start recording, all interlocutors receive a notification about it



PRODUCTS.

OFFICE





WEBEX

a platform designed for meetings, opening up



great opportunities for continuous real-time collaboration. Among versions of this platform: the classic version offers all possible multimedia functions (phone calls, adding people to a call, etc.) and the new (next generation) version, which represents updated functions (global contacts with people around the world; creation of virtual agents; removal of noise and creating a communication channel between operators and customers; conducting digital surveys)

II. Tools for interacting with students:

CLASSDOJO



It has about 50 million users. The proposed communication provides communication functionality between teachers, students and their parents без обмежень in the space-time dimension; to support socio-emotional learning; and manage students' portfolio. The platform has a Stories feature that allows teachers to showcase photos from their classes in a private feed. Classdojo has a wide range of tools for teachers (attendance sheet, diary, timer, etc.)

CLASSROOM



is a free interactive platform designed for educational institutions to upload and distribute tasks; variations of virtual communication. The platform allows you to create a course; enroll students to it; share materials; check assignments, evaluate them and monitor progress

GOOGLE

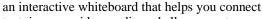
DOCS



is a free platform that allows you to create and

edit documents in a real time; exchange comments; formatting documents (selecting and changing colours, font, decoration; create tables, diagrams, etc;); upload files to the server and download them in the required formats

PADLET





text, images, video, audio and allows you to organize "brainstorming" and post the necessary information; to perform practical tasks together; to create and implement projects. Padlet is easy to use: it summarizes all the material in a virtual space

III. Resources for creating texts, assignments, information resources

CLASSTIME



a web-based platform that enables the teacher to assess the students' knowledge and present the progress of both of each individual student and the class as a whole. The advantages of this platform are assessment of knowledge; easy-to-use interface; full integration with Google Classroom is possible



KAHOOT a learning platform that allows you to conduct classes in an interactive format; to check the level of students' achievement by testing them. Features of the platform are the following: to involve up to 50 participants in the process of Kahoot! testing; independent creation of questions; automatic movement of answers in the question; use of images; managing the time for completing tasks; determining the rating for for correct answers; building the group's progress **LEARNING APPS** an online service that allows you to create interactive exercises. With its help, teachers can develop and store interactive tasks in various subjects, and students can complete tasks in game-like manner. The service is available in many languages, including Ukrainian Learning Apps orq STUDY-SMILE an online resource is designed to perform certain functions in the most efficient and transparent way. These functions are the following: homework, online attendance; class management; reporting on the work done. Study-smile is characterized by an easy-to-use interface and interesting features. The service provides a systematic presentation of an educational material; its comprehensiveness; teacher's support NAUROK an educational resource for teachers, which includes a library with author's materials and useful articles. The platform is uncomfortable to register and to create tests; a large number of different functions; there are limited amount of tests and only two types of questions **MIYKLAS** The free online platform MyClass offers for the teacher to prepare tasks for distance learning; aims to motivate students to learn by competing with their classmates. The resource is approved by the Ministry of Education and Science of Ukraine as an innovative platform for the New Ukrainian School. The interface is in Ukrainian. The main functions of the service are monitoring and checking the quality of the homework done by the students and building an individual approach to each student. The advantages of this platform are the following: about 2 million tasks; methodological recommendations for teachers; variants of tasks; task options; guarantee of student independence during the completion of tasks; automatic checking of the level of completion of tasks; the ability of each teacher to create their own programmes independently

4. DISCUSSION

Answering the first question "Which online platforms are used by teachers for conducting classes in linguistic disciplines? What do you think are their advantages?", students named ZOOM and Classroom. According to students, almost 90% of the educational components, including the linguistic cycle, they learn on the ZOOM platform, which allows you to create a video conference and reach a large number of participants (100 or more) for synchronous communication, demonstrate visual material (optionally with shared access), chat, etc.; the meeting can be scheduled in advance, or a permanent conference can be formed. The teacher-organiser has the right to add and remove participants, give the right to respond, or prohibit a speech. However, students also emphasized that the app is not well protected from hackers who attack the conference (Zoom-bombing) (students were participants in such a conference) and post its recording online without the consent of the organizers and participants (Klesius J. P., Homan. S., & Thompson, T., 1997).

The answer to the second question "What types of visual materials do teachers offer to



support language teaching in the classroom?" showed that the main types are presentations, and less often media texts. Presentations contain theoretical material, schemes, tables, diagrams, samples of the documents that students will be able to compile in the future, etc.

The third question "What types of visual materials for practical classes did you prepare?" made it possible to find out that students created diagrams, tables, graphs, diagrams, presentations. Students are aware of the importance of using a variety of tools for visual presentation of the information (Rahm, D., & Reed, B.J., 1997).

The answer to the fourth question "What applications do you use to prepare for practical classes?" showed that students most often use "Canva" - a service for creating presentation support with high quality presentations, namely: presentations, informational stories, diagrams, tables, charts, mind maps, etc. that can be developed using free templates; it is possible to edit templates, upload photos, remove and add elements. The online resource allows you to work in a group in a real-time, and a premium subscription provides more features (Bashir, F., & Warraich, N. F., 2023). The advantages of this service are the following: a user-friendly interface, it has a large number of free templates and graphics, the potential to store information in video, PDF, and JPG formats.

Respondents' answers to the fifth question "What do you think are the requirements for selecting the necessary material, its composition and presentation in the classroom?" showed that students identify the following requirements: correctly selected colours - use of colours that can be combined (not too bright, but not too pale); font features – highlighting a title, a subtitle; a text – a limited amount of theoretical material and preference for diagrams, tables, mental maps, etc (Sofi-Karim, M., Bali, A. O., & Rached, K., 2023).

The answer to the sixth question "What is the importance of innovative information and learning technologies in the educational process?" demonstrated that students better perceive and memorize educational materials when there is ICT support.

The seventh question "What are the disadvantages of using all-network technologies in the modern educational process?" helped to find out that in times of war there is not always access to high-speed Internet, so students cannot always participate in classes; sometimes the computer literacy of the teacher is insufficient (teachers do not always have time to thoroughly familiarize themselves with the particular online resource); and the student's computer literacy is sometimes insufficient; students are often distracted from classes by playing games or browsing social media, especially when the camera is not switched on.

5. CONCLUSION

Based on the research findings, the strategy of building the educational process in higher education institutions is a clear and flexible system that organically combines both traditional and innovative forms of education, which together constitute blended learning. Through mediation by DL, future linguist specialists can access world sources of information from any place (if there is a worldwide network) and at any time convenient for them and the teacher; communicate with like-minded students, teachers from other cities, and HEIs; obtain education in different educational institutions in parallel; choose a system of education, content, forms, methods; participate in competitions and Olympiads held in different cities and countries; promote their own scientific and educational achievements in the form of articles, methodological developments, etc. The conducted survey showed that most often classes in higher education institutions are conducted using the ZOOM platform (90% of educational components), which has its advantages and disadvantages; it is a prerogative to develop and demonstrate presentations containing a theoretical material, diagrams, tables, charts, etc; students create diagrams, tables, graphs, charts, presentations independently. The most popular in terms of use is the application "Canva", which helps to create high quality presentations. Creating such type of product, it is important to take into account the colours, font and a certain



amount of text material. Among the identified disadvantages are limited access to the Internet, insufficient information literacy of both the teacher and the student, etc.

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