

Galyna Nagorna, Alla Moskalenko, Olha Horina, Olha Honcharuk, Lyudmila Demchuk. (2022). Modernization of Education During the Pandemic Conditions for Effective Education on a Distance Basis. *International Journal of Early Childhood Special Education (INT-JECSE)*, 14(1): 449-458. DOI: 10.9756/INT-JECSE/V14I1.221056

Received: 24.09.2021 Accepted: 09.12.2021

Galyna Nagorna¹
Alla Moskalenko²
Olha Horina³
Olha Honcharuk⁴
Lyudmila Demchuk⁵

Modernization of Education During the Pandemic Conditions for Effective Education on a Distance Basis

Abstract

The high demands of the new era and society's changing attitude towards a specialist determine the need to create more effective learning conditions that contribute to the most rational use of psychological, physical, and temporary resources of an individual. In this regard, in the context of modernization of education and its integration into the world educational space, the problem of professional training and advanced training of a person acquires particular relevance. The article examines the development of modern society in the conditions of globalization processes' influence, determining the emergence of new demands for a subject in any activity field, in particular, in higher education. Furthermore, the pandemic led to enhancing the application of distance learning technologies. In the future, their implementation experience should become the basis for the development of innovative teaching methods, increasing the efficiency of the educational process, and improving information and resource support.

Keywords: Modernization of Education, Pandemic, Learning Conditions, Distance Learning, Modern Technologies.

Introduction

The coronavirus pandemic had negative impact on most of the countries of the world and practically all the areas of public life, in particular the education system. Social isolation remains to be among the core ways to restrain dissemination of infection, and this requires closure of educational institutions partially or fully, as well as rearranging functioning of their accompanying infrastructure (Reuters, 2020).

Due to this situation, over 1.5 billion students worldwide (which constitutes 91.3% of

the total student population) are cut off from their educational institutions. Today, government authorities, leaders of educational institutions, teaching staff, as well as the students themselves and their parents try to adapt to these new learning conditions, adopting various formats of remote interaction (The University of Kansas, 2021).

However, prior to pandemic, experts have argued about the way digital technologies will change the face of modern education, how they will impact the general perception of learning,

Galyna Nagorna¹, A.V. Nezhdanova Odesa National Academy of Music, Novoselskogo Str., Odesa, Ukraine. Email: muse@odma.edu.ua

Alla Moskalenko², Taras Shevchenko National University of Kyiv, Volodymyrska Str., Kyiv, Ukraine. E-mail: alla_moskalenko@ukr.net

Olha Horina³, Dnipropetrovsk State University of Internal Affairs, Gagarina Ave, Dnipro, Ukraine. E-mail: gorinaotot@gmail.com

Olha Honcharuk⁴, Pedagogic Volyn National University of Lesya Ukrainka, Vinnichenko Str., Lutsk, Ukraine. E-mail: olga18092006@gmail.com

Lyudmila Demchuk⁵, State University "Zhytomyr Polytechnica", 103, Chudnivska Str., Zhytomyr, Ukraine. E-mail: ke_dlm@gmail.com

and, naturally, response of the current education system to the challenge of digitalization.

In today "Covid environment", it has become clear that answers to some of the relevant questions of education fate in the near and long-term prospect may be received faster than one could expect. Already now, the pandemic acts as a catalyst for high-speed change in this area. In various parts of the world, educational leaders faced a difficult choice almost immediately: they had to readjust educational processes to online environment or make even worse decision – to put training process on pause, temporarily stopping institutions' activities (Regush & Orlova, 2016).

Adhering to the first option, countries mostly face many common problems – this includes the problem of communication channels availability, lack of equipment and software, and other manifestations of digital divide, for example, high cost of telecommunication services.

In this situation, public authorities and professional organizations, as well as business community representatives, are uniting efforts to build effective educational process using all available means, in the attempt to reduce the existing degree of digital inequality literally "on the fly". The practice which emerges in transferring full-time education to online environment, applying distance educational formats, can be boiled down to several areas:

- Organization of training using online educational platforms.
- Broadcasting of educational content on TV and radio channels.
- Conducting classes using social networks, as well as instant messengers, and through e-mail.
- Replicating hard copies of teaching materials and delivering them to students at home (The World Bank, 2020).

Literature Review

With the rapid growth of information, a specialist needs to study for almost his entire life in the current world situation. Previously, one could afford to learn once and for all. It was quite enough to have this stock of knowledge. Today, the idea of "education throughout life" causes the need to search for new methods of transferring knowledge and learning technologies (UNESCO, 2020). Internet network technologies and distance learning open up new methods of transferring knowledge and learning technologies.

With the rapid growth of information, a specialist needs to study for almost his entire life in the current world situation. Previously, you could afford to learn once and for all. This stock of knowledge was quite enough. Today, the idea

of "education throughout life" leads to the need to search for new (UNESCO, 2020). Internet technologies and distance learning open up new opportunities for continuous training and retraining specialists, obtaining a second education, and making education more accessible. Distance Learning (DL) is currently spreading worldwide, which provides a unique opportunity to acquire new knowledge in various fields of human activity, independently planning the place, time, and form of education. DL is a system of training a specialist of the 21st century, characterized by high professionalism, striving for cooperation, self-affirmation, and a high level of communication with colleagues (Piskunova, 2021). The need for lifelong basic education or retraining creates the potential of distance learning. As a result, many distance learning courses and even distance learning universities have appeared in the world.

Development of modern society is going on under the influence of globalization processes, which, in turn, determine the emergence of new subjects in any fields, including higher education. On March 11, 2020, WHO Director-General Dr. Tedros, at a press briefing on COVID-19, characterized its spread like a pandemic (Abramyan & Katasonova, 2021). The coronavirus outbreak caused the massive use of distance learning technologies in many countries (Chikileva, 2019).

Technologies of distance education are implemented using information and telecommunication technologies with indirect (at a distance) or not wholly mediated interaction between a student and a teacher (Chakraborty et al., 2021).

For the first time, distance education was applied in practice in 1836, in Great Britain, when the University of London was established. Since 1858, the University of London has made exams open for students from other countries. This approach contributed to the emergence of educational institutions that continued to prepare students for the university program, but assignments were sent to them by mail. It should be emphasized that before the University of London in 1728, Caleb Philips offered to teach stenography to everyone by mail. In addition, an institute of correspondence education appeared in Berlin in 1856. Later, correspondence schools appeared in the United States, the University of Chicago and Canada's Queen's University began to offer distance learning. Distance education has developed thanks to new technologies. For example, when radio appeared, it became possible to create radio courses, which were first introduced into the educational process at the University of Pennsylvania (Chikileva, 2019).

Materials and Methods

The pandemic has contributed to the activization of distance learning technologies use. QS has published a report on the findings of the research project "How Universities Implement Online Learning During the Coronavirus Outbreak" (Elfirdoussi et al., 2021).

This report shows that due to the coronavirus, educational institutions have implemented many measures:

- Transferred traditional courses to work online (50%).
- Postponed the beginning of some courses to the next semester.
- Changed the dates of admission of documents for admission.
- Postponed some of their 2020 proposals until 2021.
- Began to conduct their tests in some subjects.

This survey highlights that the pandemic could have a detrimental effect on the number of student applications they receive at their institution (50% of respondents), while 26% believe they will remain unchanged (Reuters, 2020).

To ensure the educational process, specialized infrastructure and some regular digital services are used, becoming widespread recently. In this context, UNESCO experts propose classification of tools for organizing distance learning:

- Resources aimed at provision of psychosocial support for educational relations participants in the time of pandemic.
- Digital learning platforms and management systems (Google classroom, Moodle, Blackboard, Canvas).
- Educational mobile applications (intended mobile devices).
- Programs with extended offline functionality.
- Massive open online courses (MOOCs).
- Services for self-learning.
- Electronic readers.
- Programs enabling the work together online (Skype, Zoom, WebEx).
- Tools for creating digital educational content and numerous electronic databases of educational materials (The University of Kansas, 2021).

Results

Despite a reasonably wide range of existing technologies, even the countries-leaders of digital economy (USA, China, Japan) experience significant difficulties in online education organizing (Fedorova et al., 2019).

The most significant difficulty is rather not the lack of infrastructure or the unpreparedness of teachers to master certain digital technologies, but the fact that the current situation is radically changing the established social interaction patterns. Existing social ties between people of different generations are broken. Communication between students and teachers is acquiring a new format. In families an increase in tension is observed. For many families, depriving children of school meals is becoming a vital problem. The UN Secretary-General called on to provide targeted support to children in times of a pandemic.

With all the complexity and dramatism of the current situation, one can say that for the any national education system today, there is also a unique possibility of self-assessing in "combat" conditions. Educational institutions can test proposed digital solutions for their effectiveness, determine their needs for technological modernization, and, if necessary, resolve the issues of retraining and additional training for teaching staff (UNESCO, 2020).

In addition, forced self-isolation even represents a cause for some positive social changes. In particular, a growing interest in self-education through online services is observed, and large publishers already noted increased demand for educational materials in digital format.

In the survey, potential international students were asked about their interest in studying the course online in connection with the threat of the spread of coronavirus; 58% of respondents were interested in online education (Kalugina et al., 2018).

However, 43% said they would refuse the offer. This suggests, first of all, that the development of higher education will be associated with online learning. Nevertheless, experts predict the return of the traditional learning environment in the form of contact hours after the disappearance of the global emergency (Fedorova et al., 2019).

Students were also asked to name the most effective preventive measures to minimize the spread of the coronavirus. For example, 41% of the students said that the classes were conducted in large rooms, minimizing close contact (Ganina et al., 2019).

It should be emphasized that the pandemic has opened up deep inequalities in the education system. According to the OECD, over 95% of students in Denmark, Norway, Slovenia, Poland, Iceland, Austria, Lithuania, Switzerland, and the

Netherlands said they had a computer to study online successfully. In Indonesia, only 34% said they had one (Hussin et al., 2021). In Hong Kong, virtual lectures and workshops using tablets are the norms. However, many students from less developed countries hope to receive assignments via WhatsApp or email. Jenna Conan, a technology integration specialist at All Saints Episcopal School in Fort Worth, Texas, notes that most families do not have one computer per person (Kalugina et al., 2018).

Most of the respondents noted that the main disadvantage of distance learning is its inconvenience for participants in the educational process. For example, the overwhelming majority of teachers noted that "it is uncomfortable for them to teach online." In addition, students and teachers stressed that by switching to the remote form of education, "they have less free time."

The overwhelming majority of representatives of the teaching staff believe that classes in their courses are best conducted in full-time format and that the current distance format has increased their workload (85.7%); more than half of the respondents (66%) said that they do not like working at home, and 34% have no place to comfortably conduct classes (Kurbaniyazov et al., 2018).

Another disadvantage of distance learning is the lack of direct visual contact and direct interaction of the teacher with the students. This leads to the inability to control students' behavior during classes, online exams (for example, they can read textbooks while answering, use gadgets, etc.), which negates their value.

What are the Key Advantages in the DL System that Contribute to the Effectiveness of Education?

1. Manufacturability — learning with the use of modern software and hardware contributes to increased effectiveness of e-education. New technologies allow making visual information vivid and dynamic and build the educational process, considering the active interaction of the student with the training system (Kurbaniyazov et al., 2018). In addition, the Internet networks development, high-speed Internet access, multi-media technologies, sound, and video makes distance learning courses complete and interesting.
2. Accessibility and openness of training — the ability to study remotely from the place of study without leaving your home or office. This allows a modern specialist to study almost his life without special business trips, vacations, combined with the main activity, focusing on training in

the evening and on weekends. Study from almost anywhere in the world where there is a computer and the Internet. All this makes the learning process more accessible and organizationally much easier than classical training. The city where the student lives may not have the courses of interest for him. To start distance learning, it is enough to find the course you are interested in on the Internet, register on the website, and pay the tuition fee through the bank (Abramyan & Katasonova, 2021). There is apparent ease of organizing the learning process for both trainees and organizers of the training, the absence of formal restrictions on the start of training. At the same time, a person can study in another country, and even on another continent, at a convenient time for himself, and he does not need visas, tickets, hotels. Usually, distance learning is cheaper than regular training, first of all, by reducing the cost of moving, living in another city, reducing the cost of organizing the courses themselves (no need to pay for the classroom, fewer attendants, the cost of teachers can be reduced, etc.).

3. Freedom and flexibility, access to quality education, opportunities to choose a course of study. It is straightforward to select several systems from different universities, from different countries. You can study at the same time different places by comparing courses with each other. Opportunities appear in the best educational institutions using the most effective technologies, with the most qualified teachers. Studying anytime, anywhere allows students to stay in their familiar environment and maintain their usual rhythm of life and develop an individual training schedule. A person can study remotely incognito for various reasons (age, position, position, shyness, etc.). People are not always able to get full-time education. The age factor does not influence the learning process; the heterogeneity of the group is not essential. For example, it is difficult, often impossible, for a company owner to break away from the business, and distance learning is an excellent solution for him. Opportunities appear to combine training and main activity. In addition, distance learning is an opportunity to educate people with disabilities and people with various physical disabilities.
4. Advantages of preschool education over correspondence education. Distance learning is more individual; it is also more

flexible in the structure; the student himself determines the pace of learning, can return several times to individual lessons, can skip certain sections, etc. The listener studies the educational material during the entire study period, and not only during the session, which guarantees more profound residual knowledge. Such a training system forces the listener to study independently and get them self-education skills.

A student studying remotely becomes more independent, mobile, responsible, and the level of adaptability rises. Without these qualities, he cannot learn. If they did not exist initially, but the motivation for training is great, they develop. Upon completion of training, specialists come out who are really in demand on the market. DL makes the learning process more creative, opens up new opportunities for the student's creative self-expression.

5. The introduction of distance learning reduces the nervousness of trainees when passing a test or exam. However, it is no secret that the teacher's anxiety and fear do not allow some students to demonstrate their knowledge fully. Therefore, the subjective assessment factor, the psychological impact caused by the group's influence or the student's progress in other subjects, is removed. Also, a psychological factor is the ability to adapt to the style of work of each student and teacher (MINT, 2020).
6. The use of modern technologies and distance learning makes it easy to form various virtual professional communities (for example, teachers' societies), communicate among teachers, discuss problems, solve common problems, exchange experiences, information, etc.

Further development of distance learning systems involves ensuring maximum interactivity. It is no secret that training only becomes full-fledged when an imitation of actual communication with the teacher is achieved, and this should be the goal. It is necessary to use a combination of different types of electronic communications, which makes it possible to compensate for the lack of personal contact through virtual communication. Further improvement of distance learning courses is associated with the following factors:

- Multimedia (voiced videos and slide films, animation, graphics).
- Rich interactivity, including mathematical models of processes and phenomena.

- Use of streaming audio and video.
- Various control and test items.
- A large amount of educational material, which thanks to the multimedia, is easily assimilated.
- Communication of listeners among themselves.
- Use of combined delivery methods for courses: Internet, Intranet, CD-ROM programs, etc (Ganina et al., 2019; Orlova et al., 2019).

Discussion

Discussions on new, digital, reality and appropriate transformations in social sphere are held for a long, but now these changes are felt most greatly (Abramyan & Katasonova, 2021; Chakraborty et al., 2021; Chikileva, 2019; Gania et al., 2019; Khakimova, 2021; Kurin, 2021; The World Bank, 2020; UNESCO, 2020). Literally, before our eyes, there is a rethinking of learning as an essential social practice. Fast digitalization is becoming a kind of test for the strength of educational institutions, national educational systems, teachers, and, perhaps most importantly, the ability of humans to cooperate in the face of great challenges (Piskunova, 2021).

Although it differs from the two traditional forms of education – full-time and part-time, at the same time, it is a hybrid of them. The correspondence from "inherits" the fact of the distance between the student and the teacher. However, in contrast to the stream, practically devoid of seminars, distance learning is individual. Just as in face-to-face classes, it involves a personal curriculum and constant interaction with the teacher. The latter's task is to supervise training, advise on complex topics and issues, check exams and tests, and help prepare for exams. From the usual full-time and part-time forms, distance learning is distinguished by the ability to independently choose the sequence of studying subjects and the pace of work. For example, in one semester, you can take a course that takes a whole year as part of the full-time form of study, or, conversely, you can "stretch" it over two years. Another distinctive feature of DL is the virtual blurring of the formal boundaries between high school, college, and postgraduate education. Whereas previously a certain discipline included, for example, in a business administration program, could be taught only at the postgraduate level, now an independent training company can also teach it to students who do not have a diploma. Distance learning, first of all, is a panacea for the educational "hunger" of the regions (Regush & Orlova, 2016).

Distance learning cannot completely replace the traditional one. The education

system teaches and educates, largely shapes the personality, and conveys the values and traditions on which our society is based (Kurin, 2021). The educational process cannot be effectively carried out remotely: only with the emergence of emotional cooperation, the interaction between students and teachers, with direct contact, this education is possible.

At the same time, it became obvious that the idea of a complete transition to distance learning in both higher and secondary educational institutions is wrong. Distance learning is intended not to replace but to supplement and enrich the existing formats of interaction between students and teachers (Manulang, 2021).

General Requirements for DL

As for any relatively typical solution, the main groups of requirements (evaluation criteria) should be identified. Here there are two of them. The first should include the general requirements for knowledge, regardless of where they are applied and used. As for the second group, then, in fact, when deciding on the deployment of distance learning systems, the company invests in the implementation of two main (but specific to the activities of the enterprise) tasks:

- Improving the current level of knowledge and skills (buying a set of training courses).
- Constant quality control of knowledge and skills (Kurbaniyazov et al., 2018).

It is not so easy to predict the prospects for distance education and learning with the help of modern technologies since their fate depends on many circumstances. One of the main reasons is funding problems when budget cuts are required. Often, educational programs are the first candidates for layoffs. In addition, convincing management to spend money on expensive equipment can be an insurmountable obstacle. Good technical equipment is required, but not everyone who wants to study has a computer and Internet access. The complexity is also the high labor intensity of the development of distance learning courses. It takes over a thousand hours for professionals to create one hour of truly interactive multimedia interaction. One of the ways to solve this problem is to search and use existing video and audio files, the use of methods of gradual complication of distance learning courses (UNESCO, 2020). Finally, the prospects for the spread of distance learning depend on such global factors as the general state of the economy. Now the high demand for highly qualified specialists of narrow specialties contributes to the active development of the training market. Still, this balance may be

upset if the situation in the labor market changes significantly. For alternative learning approaches to gain popularity, certain conditions must be met. The key to success is integrating interactive learning with a traditional classroom environment. The involvement of classroom learning centers and schools and universities in the testing of distance learning methodologies is a critical factor in disseminating alternative learning approaches. Another reason is that the oversupply of educational services limits each individual company's amount of profit. If there is no consolidation, the growth of the online learning market will practically stop (Hussin et al., 2021). It should also be noted that in order for the content to become more attractive, the material must be "grabbing". The use of well-known brands and concepts could make people take a great interest in the material. The use of various graphics, animations, and simulations should enhance the attractiveness of online courses. Another important factor in delivering this improved content is the creation of a technological infrastructure with sufficient resources to deliver it (Khakimova, 2021). Organizations must be willing to invest in more complex, resource-intensive equipment and systems to support changing content. As we already know, many of these trends are real, and the future of distance learning looks promising. Although the industry will continue to depend on external circumstances, distance learning technology is likely to adapt to the developing society's new conditions quickly.

Application of International Standards in Distance Learning Systems

For the effective functioning of the distance learning system within a separate educational organization or company and from the point of view of forming a single information space, common standards are needed (Fedorova et al., 2019). Let's consider the main stages of implementation of this form of training in an organization by the ISO / IEC 19796-1: 2005 standard, advantages and disadvantages of distance learning for consumers, developers, suppliers, educational process organizers, and other stakeholders are due to various factors that can be grouped into the following groups:

- Economic (lower training costs, but hardware and software costs are required).
- Social (the possibility of obtaining a prestigious certificate or diploma without leaving home, but this is impossible without a high degree of self-organization of the student).
- Organizational (the process of monitoring training is simplified).

- Meaningful (there is a possibility of multiple repetitions of the material) [17].

A distance learning system is a very complex system that integrates many participants (organizers, developers, teachers, trainees, stakeholders), products (courses, systems for their development, and training management), and processes (organizational, technical, learning processes). In 2005, the first part of the standard ("General approach") ISO / IEC 19796-1: 2005 "Information technology. Learning, education and training. Quality management, quality assurance and metrics", which unifies existing concepts, specifications, terms and definitions in the field of distance learning (Ganina et al., 2019). These recommendations relate to the analysis of the components of the distance learning system and the development processes of these components. The standard defines seven main stages for implementing a distance learning system, which will be discussed below.

1. Analysis of needs. It helps determine whether the organization needs a new form of training and whether it can be effectively implemented. The criterion of necessity can be determined both by a decision of the management and by checking the organization's compliance with the following conditions: new employees of the organization must undergo compulsory training to fulfill their future duties, continuous professional development of students is required, the organization has a large number of specialists with the same competencies, and regular assessment is required.

The possibility of introducing distance learning is determined by its content: what existing or planned training/certification programs can be submitted in electronic form. Then, when implementing the project, it is necessary to determine the composition of the participants responsible for the implementation process.

IT services and a project to create a distance learning system. The project manager can be either an invited person or a specialist of the relevant service (work with students, training, IT); the list of the main functional duties includes the development of the concept of a project for the implementation of distance learning; drawing up plans, reports; interaction with management; development of regulations for the group's activities; development of regulations for interaction with organizational units; group leadership. If invited specialists carry out the work on the implementation of the project, then their actions should be coordinated with the

results of the general analysis (Ganina et al., 2019).

2. General analysis. At the stage of general analysis, it is important to determine the conditions for implementing the project, the composition of participants responsible for the implementation of the system, consumers, products, and draw-up time and financial plans. Determine the conditions for the implementation of the project: whether the learning management system will be purchased or will own developments be used; how the content will be created - by purchasing ready-made courses, developing to order, or it will be created in-house (MINT, 2020).

Today, there are more than two dozen systems on the market, each of which has its own advantages and disadvantages (both technical and functional) and is carried out in accordance with differences in licensing and maintenance policies. The price range for such systems is also quite wide. Today's electronic content market is widely represented by-products of "Economics" and "Information Technologies." The cost also varies, but it is important to consider the quality of the system's organizations offer extensive experience in developing e-learning programs. For example, suppose an organization requires a spreadsheet training course. In that case, it does not have to be developed independently, as there is a choice from a number of ready-made quality products. As a rule, when it comes to training, a significant role in this process is assigned to the use of specific training/assessment materials for which ready-made electronic textbooks/tests do not yet exist. A group is formed depending on the strategy for developing their content.

The distance learning group (if you plan to develop content on your own) usually includes a programmer, a content creation methodologist, a designer and operator(s), a teacher. In addition, the content authors are employees of the educational organization who are responsible for the learning process.

3. Creation of the concept. When creating a concept, it is necessary to determine what exactly the content and the processes to be implemented should be. At the stage of creating a concept, instructions are drawn up for authors who prepare materials for an electronic course, guidelines for processing these materials for distance learning methodologists, as well as regulations that should be followed when developing electronic courses for programmers,

- designers, operators and other categories of workers (Orlova et al., 2019).
4. **Development.** The actions of the development stage should be carried out in accordance with the specified requirements. Also, at this stage, the software implementation of the content concept is carried out in the form of course layouts, tests, templates of individual typical course pages and assignments. Filling layouts and templates with content is a fundamental issue; it should be treated with special attention.
 5. **Implementation.** During the implementation phase, training should be provided for students who are involved in this process to one degree or another. So, future listeners (students) should be informed about how to get training in a new form for them, directorate employees - how to receive reports on the progress of the learning process and knowledge assessment, teachers - how to organize student consultations in the system, etc. In addition, the developed content must be downloaded, users must be logged into the system based on their roles, and student teachers and learning managers must complete content item assignments (UNESCO, 2020; Widana et al., 2021).
 6. **Training.** In the learning process, everything that was created earlier in the framework of the project for the introduction of distance learning is implemented. As in any learning process, in this case, the student receives knowledge, skills, and abilities, and the teacher controls the learning process and controls its results.
 7. **Assessment and optimization.** The evaluation and optimization phase includes analysis, evaluation, and, if necessary, identifying ways to improve the following parameters:
 - **Content:** for example, if few of the students were able to cope with the task, then it is either too complicated (in this case, it is necessary to make changes to the teaching materials), or incorrectly formulated (UNESCO, 2020);
 - **Functioning of the system:** the correctness of the formation of reports and their completeness (Kalugina et al., 2018);
 - **Technical parameters,** for example, if the loading of the course takes too long, then you need to either split the course into smaller parts or if the quality of communication systems is

unsatisfactory, change the way of delivering educational materials to students (Chikileva, 2019);

- **Processes:** if the training specialist could not timely answer the listeners (students) regarding the work in the system, then it will be necessary either to increase the distance learning group or to develop a separate course on working with the system (Regush & Orlova, 2016; UNESCO, 2020).

The use and understanding of product and process standards in distance learning by all participants in the educational process will expand the scope and provide the end-user of this form of education with a quality product (Kurin, 2021; Manullang, 2021; The University of Kansas, 2021).

Conclusion

The active use of Internet technologies in education makes it possible to use modern tools for organizing education around the world effectively. Distance learning is widespread in the university environment and is also actively used for teaching in different regions. In the context of on-the-job training of managers, a high subject qualification of the teacher himself is required (practical recommendations and personal experience in applying knowledge, adjusted for the regional affiliation of the participants). Visualization of the material requires, first of all, a thorough, detailed, and competent display on slides of all aspects and details of the subject under consideration (product, technology, process), but this alone is not enough. It is necessary to introduce an element of novelty: the more routinely the teacher reveals the topic and communicates about the subject, the less the attention of the students and the assimilation of the material. And, conversely, the more practical examples based on their own original experience the teacher gives, the higher the level of attention of the distant audience and, accordingly, the better the material is assimilated.

The use of the distance learning system in modern conditions is justified by the following positive factors: savings in training costs, the availability of the Internet and Internet technologies, opportunities for a wide coverage of regions. Of course, it is necessary to consider the influence of organizational and technological solutions that increase the effectiveness of the use of Internet technologies in teaching. In this case, it is recommended to use complex multimedia solutions when creating educational content to consider the main factors affecting the success of the distance learning system

(technological efficiency, preparedness of teachers and students to conduct interactive classes). When planning distance learning, it is necessary to be guided by the educational process principles in a virtual model. These principles include the following:

- Originality and clarity of materials.
- Crushing educational material for better digestibility.
- Stimulating the assimilation of the material due to cyclicity, that is, alternating the introduction of new information (online learning) with its development in practice (self-education).
- Using a variety of teaching methods (lecture, seminar, demonstration, discussion, exchange of experience, tests in practice).
- Interactivity (feedback from participants).

At the same time, it should be noted that the use of distance learning is limited. The distance learning system has proven itself in short-term training seminars, but combined training is required to consolidate skills and personal growth. What will experience from this forced rapid digitalization be able to endure for each educational institution, and for educational system as a whole, and for all of us, in one capacity or another, facing this system for the most part and the new social reality that is being formed around it in connection with the pandemic? Perhaps right now, the most favorable conditions for elaborating comprehensive development strategies are emerging for educational institutions and society. A certain pause caused by temporary isolation will allow us to take a fresh look at what constitutes the core of modern education, to understand better what tasks we set before it for the near future, and, most importantly, to answer the question, is its total transformation vital?

References

- Abramyan, G.V., & Katasonova, G.R. (2021). *Features of the organization of distance education in universities in the conditions of self-isolation of citizens during a viral pandemic*.
- Chakraborty, P., Mittal, P., Gupta, M.S., Yadav, S., & Arora, A. (2021). *Opinion of students on online education during the COVID-19 pandemic*, 3(3), 357-365. <https://onlinelibrary.wiley.com/doi/10.1002/hbe2.240>.
- Chikileva, L.S. (2019). The role of the tutor in the choice of pedagogical management tools for autonomous work in foreign languages. *Integration of Education*, 23(3), 475-489.
- Elfirdoussi, S., Lachgar, M., Kabaili, H., Rochdi, A., Goujdami, D., & El Firdoussi, L. (2021). *Assessing Distance Learning in Higher Education during the COVID-19 Pandemic*. *Education Research International*, 2020.
- Fedorova, E.A., Balandina, L.A., Bezhanova, S.V., Polyakova, R.I., & Yudina, E.V. (2019). Formation of technologies for the use of intercultural communication. *International Journal of Engineering and Advanced Technology*, 9(1), 4532-4535.
- Ganina, E.V., Malyugina, N.M., Polyakova, R.I., Fedorova, E.A., & Bykova, O.N. (2019). Destructive communication in the information space. *International Journal of Engineering and Advanced Technology*, 9(1), 5565-5569.
- Kalugina, O.A., Vasbieva, D.G., Shaidullina, A.R., Sokolova, N.L., & Grudtsina, L.Y. (2018). ESP blended learning based on the use of smart coursebook. *XLinguae*, 11(2), 445-454.
- Khakimova, L.R. (2021). *The role of distance learning in the higher education system during the period of quarantine measures in connection with the COVID-19 pandemic*. <https://ojs.ukrlogos.in.ua/index.php/interconf/article/view/2582>.
- Kurbaniyazov, Z.B., Toirov, E.S., Yazdanov, A. Ya., Khudaykulova, Sh. I., Davlatov, S.S., & Amonov, M.M. (2012). *Information and communication technologies in the development of continuous medical education. Lingvo-psycho-pedagogical aspects and methods of their application in teaching: republican collection of scientific articles and abstracts*. Samarkand: Samarkand Medical University, 98-100.
- Kurin, A. Yu. (2021). *The role and place of distance learning in the preparation of a future specialist in social work*. <http://vernadsky.tstu.ru/pdf/2010/04/18.pdf>
- MINT (2020). *Covid-19 impact: Online learning companies see spike in number of students*. <https://www.livemint.com/companies/news/covid-19-impact-online-learning-companies-see-spike-in-number-of-students-11584724448197.html>
- Orlova, N., Ignatova, O., & Tereshina, O. (2019). Educational resource in the paradigm of the digital economy. *Studies in Computational Intelligence*, 826, 579-587.
- Piskunova, I.V. (2021). *Implementation of distance learning during a global pandemic on the idroo.com platform*. <https://moluch.ru/archive/304/68586/>.
- Regush, L.A., & Orlova, A.V. (2016). *Educational psychology: a tutorial*. Third generation standard. SPb.: Peter, 416.
- Reuters (2020). *Online learning rockets in coronavirus pandemic, says Pearson*.

- <https://www.reuters.com/article/us-health-coronavirus-education-pearson/online-learning-rockets-in-coronavirus-pandemic-says-pearson-idUSKBN21D384>
- The University of Kansas (2021). *The Evolution of Distance Education in 2020*.
<https://educationonline.ku.edu>
- UNESCO (2020). *COVID-19 Educational Disruption and Response*.
<https://en.unesco.org/covid19/educationresponse>
- UNESCO (2020). *National learning platforms and tools*.
<https://en.unesco.org/covid19/educationresponse/nationalresponses#EASTERN%20EUROPE%20&%20CENTRAL%20ASIA>.
- The World Bank (2020). *How countries are using edtech (including online learning, radio, television, texting) to support access to remote learning during the COVID-19 pandemic*.
<https://www.worldbank.org/en/topic/edutech/brief/how-countries-are-using-edtech-to-support-remote-learning-during-the-covid-19-pandemic>.
- UNESCO (2020). *COVID-19 Educational Disruption and Response*.
<https://en.unesco.org/covid19/educationresponse/>.
- UNESCO (2020). *Distance learning solutions*.
<https://en.unesco.org/covid19/educationresponse/solutions>
- UNESCO (2020). *National learning platforms and tools*.
<https://en.unesco.org/covid19/educationresponse/nationalresponses#EASTERN%20EUROPE%20&%20CENTRAL%20ASIA>
- University of the People (2021). *What Is Distance Learning? The Benefits of Studying Remotely*.
<https://www.uopeople.edu/blog/what-is-distance-learning/>
- Widana, I.K., Sumetri, N.W., Sutapa, I.K., Suraya, W. (2021). Anthropometric measures for better cardiovascular and musculoskeletal health. *Computer Applications in Engineering Education*, 29(3), 550-561.