

DOI: <https://doi.org/10.46502/issn.1856-7576/2023.17.02.23>

Cómo citar:

Yemelyanova, O., Bakhmat, N., Huda, O., Shvets, T., & Boichuk, A. (2023). The educational crisis in today's information and digital society. *Revista Eduweb*, 17(2), 267-284. <https://doi.org/10.46502/issn.1856-7576/2023.17.02.23>

The educational crisis in today's information and digital society

La crisis educativa en la actual sociedad de la información y digital

Olena Yemelyanova

olenayemalianova@gmail.com

<https://orcid.org/0000-0002-3277-1227>

PhD in Philological Sciences, Associate Professor of the Department of Germanic Philology Faculty of Foreign Philology and Social Communications Sumy State University, Sumy, Ukraine.

Nataliia Bakhmat

bakhmat.nataliya@kpnu.edu.ua

<https://orcid.org/0000-0001-6248-8468>

Web of Science Researcher ID: R-2499-2018

Scopus Author ID: 57200174193

PhD hab. (Education), Professor at the Department of Elementary Education Theory and Methods, vice-dean of scientific activity of Pedagogical Faculty Kamianets-Podilskyi National Ivan Ohienko University, Ukraine.

Oksana Huda

gudaoksana@lutsk-ntu.com.ua

<https://orcid.org/0000-0002-3602-7892>

PhD in Technical Sciences, Associate Professor of Higher Mathematics Lutsk National Technical University, Faculty of Transport and Mechanical Engineering, Department of Physics and Higher Mathematics, Ukraine.

Tetiana Shvets

taniteshvets@gmail.com

<https://orcid.org/0000-0002-9713-7817>

PhD in Pedagogical Sciences, Deputy Director for Scientific and Methodological Work Private school of Athens in Kyiv, Ukraine.

Alla Boichuk

alla.boichuk@pnu.edu.ua

<https://orcid.org/0000-0002-6340-1894>

PhD in Pedagogical Sciences, Associate Professor at the Department of Foreign Languages Vasyl Stefanyk Precarpathian National University, Ukraine.

Recibido: 15/02/23

Aceptado: 31/03/23

Abstract

The aim of the study is to analyze the traditional education crisis and highlight the benefits and opportunities of digitalizing educational activities. The main methodology applied in this research is a review of current literature, as well as the experiences of teachers and students. The results show that the development of modern information and digital technologies, and their widespread use worldwide, significantly affect the production of goods and services, scientific work, educational processes, cultural traditions, and social relations. The obtained results underscore the fundamental

basis of the educational crisis issue in the information-digital society and distance education research in particular. The need to transform the educational industry by incorporating Internet technologies into the educational process represents a significant challenge for educators, especially in terms of overcoming the educational crisis caused by the urgent need to transition to distance learning. Under the influence of the latest digital technologies, significant configuration processes are observed in public development of a global nature.

Keywords: digital education, information society, crisis of traditional education, modern challenges.

Resumen

El objetivo del estudio es analizar la crisis de la educación tradicional y destacar los beneficios y oportunidades de la digitalización de actividades educativas. La principal metodología aplicada en esta investigación es una revisión de la literatura actual, así como las experiencias de docentes y estudiantes. Los resultados muestran que el desarrollo de las tecnologías modernas de información y digitalización, y su uso generalizado en el mundo, afectan significativamente la producción de bienes y servicios, el trabajo científico, los procesos educativos, las tradiciones culturales y las relaciones sociales. Los resultados obtenidos evidencian las bases fundamentales del problema de la crisis educativa en la sociedad de la información digital y la educación a distancia en particular. La necesidad de transformar la industria educativa mediante la incorporación de tecnologías de Internet en el proceso educativo representa un desafío importante para los educadores, especialmente en términos de superación de la crisis educativa causada por la necesidad urgente de pasar al aprendizaje a distancia. Bajo la influencia de las últimas tecnologías digitales, se observan procesos de configuraciones significativas en el desarrollo público de carácter global.

Palabras clave: educación digital, sociedad de la información, crisis de la educación tradicional, retos modernos.

1. Introduction

The information and digital society is now in its formative stages, leading to a confusion of trends, extrapolations, and speculations with reality. Now each country has its own social characteristics, products and services. Information technology and the Internet have a direct impact on the development of the information-digital society. But the priority of the Internet entails risks of separating traditional and innovative clusters of social organization. However, the impact of ICT on social processes in recent decades is undeniable. The implementation of scientific and technological development is consistent with progressive sociological theories, dominated by a pragmatic concept, where the key role is given to efficiency. At the same time, technology, communication, economic and social goods are also the result of the embodiment of knowledge in sociocultural space. The development of the digital segment has caused dramatic changes in nowadays social attitudes. First of all, this concerns such components as demographics, diversity, mobility, and the digital society (Luna & M., 2021). Changes in society were widely discussed back in the seventies and eighties before the Internet appearance. Having become a qualitatively new format for digital communication, the Internet, complements traditional models of voice and image transmission (from telegraph and telephone to radio and television).

To fully understand the development of the information and digital society tendencies, first of all it is necessary to define the concept's essence, its composition, and its social meaning. The term

“information and digital society” correlates balances in the socio-cultural dimension of information and digital technologies. Nevertheless this term is not intended to define the dynamics of modern society as a whole. Information is an important element of any society, but its importance depends on its ability to be used in the knowledge system. In this sense, there is another extensive notion of “knowledge society”. This may be more appropriate, but again this term does not take into account all the factors where the information society is based. “Knowledge society” in its practically oriented meaning actualizes the potential of ICTs in the economic activity of society.

The main focus of the study is to analyse the digitalization of educational processes and the possible crisis of the learning. It is about the wide penetration of technology in society’s quotidian life. The intense penetration of technology causes difficulties in adapting to the requirements of modernity. This situation is characteristic of the educational industry as well, since the transition to distance learning has created new requirements for the traditional set of competencies updating.

The aim of the study is to analyze the traditional education crisis and to highlight the benefits and opportunities of educational activities digitalization. The consideration of this goal was carried out through the prism of the main research questions analysis:

1. Characteristics of modern digital society, the importance of education in human digital activity
2. The analysis of the transformation of the educational industry caused by the Covid-19 pandemic.
3. The role of digital environments in modern educational actions.
4. Highlighting the opportunities and prospects for the further development of digital education in the structure of an informatized society.

2. Research Methodology

General Background

General scientific and special pedagogical research methods were used to implement the main objectives of the study. Particularly, among general scientific methods the use of analysis, synthesis, induction and deduction was of the main importance. At the same time, in the work were applied such methods as concretization, abstraction, comparison. This article is formed on objectivity and systematicity principles. This article’s research process is based on a review of modern literature on the problem of using digital education at the present stage of development of the information society. The use of modern empirical and statistical research was of particular importance.

Materials

The main materials of the study are official legislative acts, mainly:

1. Ukraine's Higher Education Development Strategy for 2021-2031 (Ministry of Education and Science of Ukraine, 2022).

2. The concept of digital transformation of education and science of Ukraine (Ministry of Education and Science of Ukraine, 2021).
3. Laws of Ukraine "On Higher Education" (Law 1556-VII, 2014).

Studies are also formed on the basis of European legislative acts adopted by the European Commission and the European Parliament.

These documents of legal nature influence the formation of a systematic analysis of the current transformation in education in the world and Ukraine.

Instrument and Procedures

Based on the analysis method, the main subject of the study (the educational sector crisis) is divided into separate elements (the study of the significance of the modern digital society, the analysis of the main transformations in education, highlighting the opportunities and prospects of distance learning). By means of synthesis these elements are combined and the general state of digital education in the world and Ukraine is investigated. The authors explore the topic of information and digital society and the impact of the educational crisis on it on the basis of scientific concretization. Pedagogical process, methods and ways of distance education introduction under the conditions of educational crisis caused by COVID-19 epidemic are analyzed on the base of system principle, tendencies of modern information and digital society development and problems of new technologies formation in pedagogical process, which contribute to the educational crisis of recent years, are considered. On the basis of abstraction it was possible to move from the general theoretical justification to the formulation of conclusions and reflections. The predictive method use enabled the judgments about the prospects and opportunities for the use of distance education in the future.

This theoretical study was divided in several stages. First stage - the state and prospects for further development of digitalization of society, second stage - the main transformations in education and features of the implementation of e-learning were characterized, third stage - the prospects and opportunities of digital learning through the prism of foresight analysis were determined. The last stage of the study enabled the formulation of conclusions and recommendations.

3. Research Results

The information cluster has enormous scale and significance as it enables the convergence of two major activities for social life: knowledge manipulation and communication. Information technologies make it possible to store, organize and process enormous amounts of information with incredible speed. New communication technologies make possible the transmission of the content instantaneously on a global level, being able to regulate the access to information, and to reduce communication costs. The Internet is a computer network where computers communicate in real-time, instantly providing information anywhere in the world. Consequently, the information and communication component overcomes localization in the physical dimension and moves into "virtual space," allowing simultaneous contact between an infinite numbers of people, regardless of their physical location (Bailey et al., 2022).

Creating a multicentric global learning system for continuous improvement of management will be the main challenge for information society policy (Bauer, 2022). The formation of the information society in Ukraine is an important condition of European integration processes in Ukraine and a prerequisite for its development as a modern state. It needs an effective constitutional and legal support. First of all, it is necessary to improve information law and information legislation. After all, only with the effective regulation of social relations in the information sphere the creation and development of the information society is likely (Shevchenko, 2019). The formation of the concept of the information society, which began in the late 1960s, is still characterized by a lack of unity in the scientific argumentation of the methodological tools and scientific vision of future social development. It can be assumed that this is due to the fact that the concept of information society since its inception been constantly transformed under the influence of scientific and technological as well as social progress and forms such phenomena as "knowledge industry", "post-industrial society", "white collar revolution", "information revolution", "information and communication technology", "social informatics", etc. Given the changes of the fourth industrial revolution, the modern "information society" continues to transform in the direction of digitalization and robotization of social life.

The modern society with its high level of information technology development, with its culture, and structure and is an information-digital society. A society where information plays a crucial role in how products and services are created, research, education, life, and social relations are carried out, and civil rights are exercised. Social culture and education are changing under the influence of information and digital technologies. The creation, processing, and transmission of information is a technological prerequisite for the formation of an information-digital society. The information society refers to a community where information and technological infrastructures are used to create, store, and disseminate information through information and digital technologies. All elements of information activity are a technological condition for the formation of the information-digital society. The information society advocates the actualization of infrastructural elements of the information environment based on digital technologies. They increase their influence on all clusters of economic and economic activity. In the public sphere, the concept of the information-digital society got its status in the 1970s. The need to focus on socio-economic development, the construction of equipment and technology, and other innovations associated with the widespread introduction of computer technology, the development of telecommunications technology is emphasized. Ideas such as the information-digital society are important because they shape perspectives on how the world works and thus influence the decisions of individuals, companies, and governments. Despite the many challenges to the idea of the information-digital society itself, the concept is increasingly shaping public understanding of the social and economic changes associated with computers and information and communication technologies. The innovativeness of ICT is primarily associated with the formation of new perspectives on the world order, the public sector, society, business, and the individual. Despite the contradiction of the ideas of the information-digital society, this concept is increasingly defining the public understanding of social and economic changes related to computers and information and communication technologies. Many agencies and institutions are now relying on the concepts of information as a new strategic resource. Such a focus can be misleading, especially if positioned solely on the information sector and from the perspective of other clusters of the economy are abandoned. The information society paradigm is based on the infrastructural elements of advanced industrial communities. The problem of developing an

information-digital society is complex and multifaceted, so it cannot be conditioned by a single factor. However, this problem must be solved in a multidimensional way and considered with the help of various indicators. However, the idea of the information society had support (and sometimes passion) and refocused attention on information and communication technologies as a fundamental element of socio-economic development. New perspectives of the information society have significantly changed the role of technology in both theoretical and methodological and practical aspects.

The challenge for the information-digital society is to improve and simplify the life. Great volumes of information can cause anxiety and fear for most people because people tend to be afraid of what they don't understand. They may be skeptical of the inevitable changes in society brought about by the need to be constantly in an environment filled with a variety of information. However, it is necessary to point out the importance of such changes. The attempts to conceptualize social perspectives involves taking into account trends of globalization and integration, which requires reconciling the dimensions of physical and digital space. Digital innovations, by providing this process, form the risks of society's dependence on technology, creating a sense of flawless functioning of systems (Ogonowski, 2020). Societal change means developing processes of interaction, so it is very important to understand how the information-digital society will affect us. Let us consider the advantages and disadvantages of the information-digital society.

The benefits are determined by the social implications. Digital networks increase the speed of information exchange. At the same time, they reduce the time and cost of accessing various information. Digital networks are also of great importance for the environment, reducing paper consumption and therefore the destruction of forests. But the use of electronic correspondence is only the beginning. Internet searches bring us one step closer to each other. The world is becoming increasingly digital, where the Internet facilitates economic development and the exchange of services. For example, libraries are now easily accessible regardless of one's location or hours of operation. There is a 24/7 access to all kinds of information. Various educational institutions can pass on the accumulated scientific knowledge, research, and development to everyone. If working, communicating, and buying different goods and services online, people become members of the information-digital society.

The costs are also determined by the social implications. Now more than ever, humans have access to an enormous amount of data. We can observe natural and man-made cataclysms online in real-time. But a large amount of information does not allow us to be fully aware of reality, we are very superficially aware of all the issues. We detach ourselves from what's going on because it's far away from us. Some people even develop insensitivity to tragedy because it seems that disasters happen everywhere. The ability to block out negative information to prevent it from affecting us develops. The security of sensitive data is also another important online issue that needs to be addressed. Overloading the information-digital society with negative data can become a destructive social factor if left unchecked. From the streets, toward our computers and homes, a lot of malicious content, such as e-fraud and all sorts of offenses, has been carried over. Digital data cannot be fully regulated. Today, information uncontrollably serfs over the Internet and so its security has become extremely important, as has its probability. For most economic activities in the modern world, the main type of professional competence is the ability to find, analyze and use information. Thus, information technology is closely related to the educational process,

although this relationship is ambiguous. The role of information technology in education has two tasks: to convey specific educational information to further develop the student's ability to use it independently and the use of the Internet to develop specific knowledge and skills (segment of higher professional education, language cluster, qualification level improvement, professional growth in existing and new areas). The number of educational institutions around the world is increasing and almost everyone is using multimedia and distance learning technologies in the educational process. Learning CDs require only computers with no Internet access. Due to the rapid spread of social media, the potential for global messaging and effective news dissemination has developed in recent years (Massimo & Muschert, 2017). At present, there is a lack of statistical data on practical indicators of the benefits of the Internet, especially in comparison to traditional educational systems. Although early attempts at strategic research on the impact of the Internet on education have noted positive results in language learning, business, higher education, and pedagogy. Private educational institutions have continued to function routinely in markets because they have not felt the full impact of the educational crisis. At the level of secondary education, the actualization of the Internet segment seems ambiguous, except to meet the needs of children with disabilities. The aforementioned lack of strategic comparative research does not allow a clear definition of the contribution of digital technology to school education. Practice-oriented research shows that teaching excellence remains a key element of the educational space, and the digital arsenal can be used as a supplement to the structural elements of learning. The main indicator from an individual's perspective is success in learning. For most students, the transfer to distance learning was a reason to be more effective because they found it easier to focus on the subjects; it felt as if they were watching the lesson face-to-face, which made it easier to understand the theoretical part.

Comparative studies in contemporary scientific and pedagogical discourse argue that "education plays an important role in technological innovation and economic growth, but modern education is different from traditional offline education. Schools, students, and institutions are looking for more effective ways to learn, and distance education, based on technological innovation, has attracted widespread attention. Distance education, also known as distance learning, e-learning, and online learning, provides regular and meaningful learning activities for students separated from teachers (Topuz et al., 2021). Nowadays, the need to transform the educational industry, by adding information and digital segment to educational activities, becomes a major challenge to educators, especially to overcome the educational crisis caused by the abrupt need to move to distance learning.

Before the COVID-19 epidemic, distance education was not a common solution to educational problems, regardless of the degree of natural or man-made disasters. Situational distance education has unique existential and axiological dimensions, differing from planned distance education in several ways (See Table 1)

Table 1.

Main features of situational distance education

Uniqueness of situational distance education	
Unexpectedness	Distance education was introduced suddenly, because of an urgent need, with no prior instruction or preparation. The educational community was forced into online classes with no prior knowledge or skills
Global	The educational process around the world has been forced to move to the information-digital space. Distance education has become a mandatory, universal solution to the crisis, regardless of local preferences and needs. Whereas in the past it was a local problem, now it is an international problem. However in the past it was a local problem, now it is an international problem. Earlier efforts were aimed at institutionalizing the distance format of education, but now there has been a reorientation of pedagogical discourse toward an interpretation of internationalization. The increase in the share of distance format in the educational system provokes the risks of uncontrollability of the quality of education.
Pervasiveness	The education has become a common process for all societies, dominating the information-digital environment. It is about its quick spread. Distance education, with its attendant terms and concepts, has shifted from an alternative to a traditional dimension in society, correlating the balance of formal or informal formats, online or offline venues.
Proliferation	Distance education has gone beyond its usual zone, that is, the academic environment. For higher education, online learning is not new, but its introduction in schools, especially elementary schools, is remarkable. Distance education has now become a means of learning for a variety of ages, from kindergarten to doctoral level.
Mandatory	In many educational institutions, there has been an imposition of these practices without regard to democratic principles and procedures, even in regions where democracy has a dominant status. It has been applied as a primary means of completing the educational process.
Emergency Medical Care	While distance education is often introduced because of geographic isolation, disability, and war, during the epidemic it was used as a tool to combat medical tragedy. The media portrayed distance education as the only means to help schooling escape the clutches of the coronavirus

Written by the authors of the article

Thus, teaching in an information-digital environment has become a matter of integrating diverse elements (normative-disciplinary, practical-pedagogical, human-dimensional, organizational-regulatory, as well as technological) - provided that teachers manage the dynamics of this process productively (Liu et al., 2022). If previously distance education was a luxury, then during the epidemic it has acquired the status of a non-alternative learning format. The use of distance or blended learning has become necessary rather than recommended.

Teachers' experience plays an important role in a crisis context that simultaneously creates new opportunities for the transformation of teaching methodologies. The educational crisis in today's information-digital society impacted faculty work in the early days of the COVID-19 epidemic and forced a complete rethinking of the concept of will and its value for understanding teaching in extraordinary circumstances. At the beginning of the pandemic the vast majority of research

focused on the problems faced by education applicants. However, further social research has embraced the experiences of educators. Summarized reports indicate perceptions of online learning, though with varying levels of motivation (Topuz et al., 2021). To understand the process of creating distance learning courses, one must understand the steps that instructors take in developing them because their most important task is to ensure that students learn quality content. Parties interested in improving the quality of instructional materials can provide instructors with additional resources, such as reviewing courses and projects. This can be done by sharing existing courses or giving each other feedback on the effectiveness of elements and content of instructional materials. Templates can also be offered to help structure and share content (Al Lily et al., 2020). It is suggested considering a few contingencies, such as the extra time that instructors spend developing and planning online classes and assessments, as well as for registering, accessing, and populating digital platforms with instructional materials. The importance of teachers' information and digital literacy, experience, and online skills should also take into consideration. Support and encouragement of the transition to the latest technology by the leadership of the educational institution actualize the role in the formation of distance education. To move all existing courses into the information-digital space in a matter of days is a massive, disruptive change. It should be realized that a full-fledged online course requires the development of a detailed lesson plan, teaching materials. However, because of the sudden emergence of COVID-19, most teachers face problems related to the lack of experience in online teaching, prior training, or proper initial methodological and organizational support (Damsa et al., 2021; Wlodarczyk et al., 2020). Stakeholders and higher education administrators had no choice but to use online technology, i.e., distance learning, to pursue academic activities at all academic institutions around the world. (Baldwin et al., 2018). The priority task of modern scientific and pedagogical discourse is to classify the teaching potential by the opportunity to show all its creativity, to correlate pedagogical and information as well as digital resources in a unified teaching practice under strict and limited circumstances. Teaching staff must be aware of the force-majeure nature of the current educational environment and the conditions in which online education is implemented in the educational process. Total mobilization is needed to reorient both the general pedagogical canons and the personal qualifications of the teacher. This can be central to how educators cope with the constraints of the pandemic and take advantage of the potential opportunities created by this exceptional situation. In addition, one must identify the new constraints as a real threat and realize that free will cannot be expressed simply as a series of mental actions, that is, desired, ideal modes of action aimed at achieving goals without specific constraints. Rather, the notion of must include the fundamental constraints under which teachers work, such as weak pedagogical and digital skills, technological limitations, connectivity, or time constraints. This allows understanding the limitations that motivate the reorientation of free will and learning goals.

Reality does not allow for long-term adaptation of teachers to the new environment and suggests a need to engage critically with the theory, pedagogical considerations, and instructional design associated with online and distance education. This has led to a dramatic transformation in educational systems around the world and has forced educators to urgently transfer to the new online mode of learning. Many educational institutions had no choice but to completely change the format of instruction and move to online learning (Bao, 2020). Educators are demanding a quick solution to the problem of moving to distance learning, an appropriate interim measure that

would allow them to work as always as much as possible. Therein lies the long-term challenge for those who support the pedagogical process.

In general, teachers approve of the introduction of virtual dimension educational technologies. Due to the fact that the new format ensured the continuity of the educational process under complex socio-cultural realities, teachers are aware of its relevance. A significant number of educators faced the potential risks of failure to continue their career or professional development. However, the virtual and digital format made it possible to survive difficult times for educators.

Of course, there are a number of disadvantages to this format of learning; among them is the fatigue from constant videoconferencing. Another threatening factor of distance learning is a kind of social isolation, leading to negative moral and psychological consequences.

Videoconferencing often provokes a violation of standard non-verbal communication. It requires subjects of the educational process to be more energy-consuming in the learning process. Technological shortcomings lead to a decrease in mutual understanding of the teacher and the student. In turn, this understanding reduces the quality of education. If adding to everything the moral and psychological aspects expressed by the general anxiety and stress associated with the COVID-19 pandemic, it is possible to get risks for the moral health of the participants in the educational process. The way out of the situation is seen as increasing interactive elements (games, discussions and debates), which can alleviate the negative feelings of social distancing. Efforts should be made in order to improve the quality of education and the coordination between teachers and students in the information and digital space (Demuyakor, 2020). Thus, the question is no longer whether the move to distance learning can provide quality higher education, but how educational institutions can immediately and effectively embrace mass adoption of online learning (Dhawan, 2020). Undoubtedly, the quarantine through COVID-19 entailed stress for educators. Teachers reported that they had to work from home, unable to meet face to face with colleagues and students. They were forced to teach in new ways, using largely unfamiliar technology, and changing their syllabi for the semester—all of which happened suddenly and without time to plan, implement, or adjust (Yu et al., 2021). The popularity of using information-digital platforms increased significantly during the educational crisis caused by the COVID-19 pandemic. This has led to the actualization of digital platforms that are location-specific and based on urgent needs. Thus, it should be noted that in times of crisis, entrepreneurs are guided by financial, social, and societal goals that affect their use of digital platforms. As a result, the findings contribute to practices management and policy debates, highlighting how information and digital platforms can be used in times of crisis to achieve transformative entrepreneurial outcomes. The capabilities of digital platforms are closely related to the intellectual dimension, that is, they are positively correlated with human, organizational, and relational capital. Educational institutions should prefer intellectual capital, which will allow the reorganization of outdated models of the educational process (Liguori & Winkler, 2020). Digital platforms are a game-changer in the educational and entrepreneurial markets, as they facilitate the access to products and services that subsequently lead to transformation. The main advantage of innovative models is to reduce the direct costs of education and to improve the financial planning. This means that digital platforms provide more user-centered innovation. Digital platforms are game changers because they facilitate the access to products and services that subsequently lead to transformational entrepreneurship. The humanity is a witness of a striking example of transformational

entrepreneurship in the educational space as radical changes are taking place in society. Transformational entrepreneurship has become an appropriate response to a number of global problems characteristic of contemporary civilizational development. It is a relevant way to bring the common denominator of societal goals with entrepreneurial activity. This indicates that transformational entrepreneurship focuses on social problems and is implemented through training or educational programs. The difference between innovative and traditional paradigms of entrepreneurship is the use of a systematic approach and the identification of prospects for further development of individual cases. This means the need to implement innovative solutions to social needs that are not currently being addressed because of business interactions. Thus, there has recently been an increased demand for transformational entrepreneurship as a distinct type of entrepreneurial activity, which carries with it an understanding of digital transformation in society. This is directly related to the entrepreneurial activities of lobbyists for the use of digital platforms that address public needs related to reducing the negative manifestations of the COVID-19 pandemic. Digital platforms have become a way of developing information and digital technologies such as personal computers, computer, and social networks. They facilitate a smooth flow of information by integrating external sources. Digital platforms can be used in a variety of contexts, such as payments, accommodation, health care, and education. This means that digital platforms facilitate the interaction between participants by offering digital content. The content is usually shaped in some way in terms of different uses. They allow you to share knowledge and disseminate information. It fosters diverse scientific communities, allowing the sharing of best practices. Digital platforms enhance a culture of innovation by encouraging the use of digital technologies. Learning is increasingly happening through the use of digital platforms. Digital platforms use information and communication technologies to gather and disseminate information (Liguori & Winkler, 2020).

Modern distance education using information and digital technologies is steadily moving forward and attracting more and more people's attention, gradually giving a powerful impetus to the development of the educational process. We consider it necessary to analyze the problems existing in distance education and ways to improve them.

Distance education is characterized by several features (See Table 2).

Table 2.
Main features of distance learning

Features of distance education	
Accessibility	Distance education, unlike traditional education, pays more attention to the development of innovative technologies. There are many educational resources and training courses with open access. But easy access to courses does not mean their easy completion, the test of acquired knowledge and skills occurs at the end of the educational program. To ensure the quality of education, information and digital technologies provide many educational opportunities and learning methods.
Flexibility.	In distance education, flexibility means the ability to meet the demands of educators and give greater independence to learners. Students can study the way they choose and at a time that is convenient for them. Thus, there is active learning rather than passive learning. In distance education, learners are responsible for their own learning progress, which develops responsibility for their results. Collaboration with the teacher takes place to ensure that the learning content meets social requirements to a certain extent. Learning becomes more autonomous, while educational institutions have to provide additional conditions, services, in particular, to deal with the educational process
Popularity	It is provided with the first two points. It is the independence of time and place and the possibility of teaching students with different backgrounds. People with different professions, skills, and backgrounds can continue their education
Sharing social resources	The use of modern information and digital technologies allows students getting more information because the learning process changes from passive recording of prepared material to active selection of data by the student himself

Written by the authors of the article

In a material sense, distance learning overcomes the time and space limitations. There is no longer a need to set up classrooms, to accommodate students for lodging. The teaching activity is also deprived of the constraints of country, residence, natural or man-made limitations. Particularly, the cost of an electronic information resource is much lower than that of a printed textbook (Ahmed et al., 2022). Teachers and students are positive about the introduction of virtual information and digital technologies in education. The latest technologies provide them with learning materials not available at their institutions, access to industry experts, and a means of making lucrative career connections. But distance learning is associated with social isolation, causing depersonalization and burnout (Chick et al., 2020; Hjelsvold et al., 2020). Online classes

result in a loss of non-verbal cues, which subsequently requires more concentration and effort than face-to-face interaction with the instructor. Group classes can be more challenging because there are often delays and communication problems, resulting in decreased interest and trust. These effects are compounded by general anxiety and stress caused by the COVID-19 pandemic and prolonged social isolation. To address this problem, more interactive elements such as discussions and debates need to be created. These effects are exacerbated by the general anxiety and stress caused by the COVID-19 pandemic and prolonged social isolation. In order to solve this problem, more interactive elements such as discussions and debates need to be created. This can make more positive associations with the introduction of information and digital technology in education. Maximum efforts should be made in order to create in-demand and quality educational content (Ratten, 2022).

4. Discussion

In this article the current literature and the trends of modern information and digital society were investigated. The problems of implementing the latest technologies in the pedagogical process, and the features of the educational crisis that has arisen in recent years were analysed. Nowadays the necessity to transform the educational sector by adding Internet technologies into the educational process is a serious challenge for teachers, especially in terms of educational crisis overcoming, caused by the acute need to move to distance learning. Under the influence of the latest digital technologies, there are processes of significant configurations of public development of a global nature. The features of this development are not always only positive. There are problems associated with the lack of personal social communication, social distance, and lack of motivation to learn and work.

In addition to the social context and family background, the level teachers' qualification remains central. Due to psychological relationship with the teacher, children develop their mental and intellectual abilities, thinking, and analytics, which are certainly important in an information-digital society where unlimited access to information can be paralyzing, as in its absence. New technologies are affecting the role of the teacher, destabilizing their functions and modifying the creative segment of pedagogical excellence and collaboration with students. They limit the creative application of their teaching expertise and social interaction in the classroom. Apart from personal interaction at the mentor-student level, there is no substitute for paper and pencil, as they are important for the development of writing skills. Student tasks completed on paper provide opportunities for both teachers and parents of students to access them. The situation will change (and is gradually changing) with the reorientation of the Internet from an experimental format of the learning process to a programmatic one. Following the example of other spheres of social activity, innovations will demonstrate effectiveness in advanced countries, and later will be implemented on a planetary scale, forming a new educational paradigm. Innovative tools will quickly replace their obsolete counterparts (for example: three-dimensional models in physics or medicine greatly simplify the acquisition of practical skills and theoretical understanding of a problem). Of course, work plans and programs will need to correlate with new learning formats and techniques. Currently, education is in a state of transformation and reorientation toward new models of learning with new educational-methodological and organizational-technological support. Because most multimedia products differ from the requirements of individual adaptation to each student's needs, especially at the school level. At the university level, an overemphasis

on the importance of the Internet as a source of information can have devastating consequences. There is a possibility that students will replace reading and writing with searching the Internet for texts that can be adapted to their tasks. Instead of using them as a starting point for their research. Overemphasis on the computer screen and on multimedia educational tools carries the risk of compromising the need for intellectual development that needs reading books and working out creative ideas. The uncontrolled use of information and digital technologies in education can have negative consequences, especially when teachers are inexperienced. Teacher's development and training will require significant investment to avoid the gap between students' awareness of the latest technology and the skills of the teachers themselves. The introduction of the computer as a teaching tool should be preceded by appropriate training programs in order to improve the teacher's qualifications. Digital-skills become a separate cluster of skills, indicating the high qualification of the teacher.

One of the most important questions today concerns the influence of information and digital technologies development and impact on the efficiency of the educational process. As the use of innovative models becomes more and more popular in education, the importance of tracking their impact on the public increases. Indicators should be identified that will show the relationship between the use of technology and learning outcomes. It should also be understood that the use of digital technology is insufficient; it is only a mean to promote creativity in learning, empowerment, and educational effectiveness. Many contemporary researchers have tried to find an answer to this question at the theoretical and empirical levels. Exploring this question, the scientific and pedagogical discourse has encountered two problems. First, is difficult to trace the student's success and there is still confusion about its definition. Second, it is difficult to separate from the sociocultural environment the development and influence of technology. Consequently, the relationship between the development of the information and digital society and educational outcomes is quite contradictory. However, the current literature reveals a gap in empirical knowledge about the information society and its impact and effectiveness on educational processes and outcomes.

As a consequence of the crisis in education caused by the COVID-19 epidemic, a record number of educational institutions were forced to urgently pass from face-to-face to distance learning and to completely adjust their educational activities, regardless of their competence in the information-digital sector. Teaching became very dependent during the quarantine. Teachers faced challenges in the new online mode of teaching, had to improve digital literacy in the same online mode, as well as to develop and provide successful learning experiences in the new realities.

Indeed, the educational crisis in the information-digital society had a corresponding impact on the practice of individual teachers, which requires additional research. This process has challenged the entire educational paradigm, which is usually the primary support structure for the learning process. In this permanent environment, the professional competencies of the teacher are a dynamic, development-oriented element. Thus, teaching in crisis requires the alignment of all clusters of the educational process.

It is common to have a lecture or seminar. This means large groups of people attending the same space at the same time, but not necessarily interacting. The same in a distance listening to a

lecture broadcast live or in a previous recording, or perhaps reading endless journal articles and posting their thoughts on a discussion board. Quality learning involves formal assessment, and it doesn't have to be heavy written work with grades. Questioning techniques, both synchronous, in the case of remote streaming, and asynchronous in the text version, which give the lecturer a framework for answering and managing the direction of the learning, can be more valuable. Further learning involves students communicating with each other, with activities divided between modes of transmission, collaboration, and application. All of this can be done through accessible digital technologies with translation platforms, shared documents, spaces, and applications. The realization that the educational process in the classroom is different from the online classroom with remote participants is a challenge for educators and students alike. The challenge for educators is to help colleagues move beyond quick responses and compensating for possible poor outcomes to fully embracing information-digital learning tools to enhance the quality of their development. Now is the time to support teachers in their work and students in their studies.

The ICT use increased exponentially during the COVID-19 pandemic because of demands for social distancing. This means that entrepreneurs and educational institutions have increased their digital competencies to compete in the global marketplace. In the digital age, more and more entrepreneurs are using different kinds of platforms because of competition. Notable digital platforms include Airbnb, Amazon, Facebook, Google, and Uber. While these global digital platforms are widely used in society, other types of digital platforms are created by government agencies for societal reasons. These types of digital platforms are creating a new audience focused on reliable, real-time information. For education, the most popular digital platforms have been Google, Action. Digital Education, Prometheus, EduHub.in.ua, and others.

To introduce modern distance education, one should first build common information and digital platform for distance learning with a common computer network. This platform could include setting up a computer network and running a video broadcasting system. In building a multimedia distance learning platform, the software is the key. In the process of building distance learning software on a digital platform, one should pay attention to one simple and universal principle, and that is to facilitate students' access to learning resources. In order to develop quality learning content, teacher training in the field of information and digital technology must be strengthened. Without the teachers' leading the learning is impossible.

5. Conclusions and implications

In the process of a learning platform generation, it is worth thinking about improving the qualifications of teaching staff as well.

However there are problems associated with modern distance education as well. Currently the whole market of distance education is developing rapidly and has great potential. Though, distance education in Ukraine is still at the stage of development, characterized by several major problems:

1. **Software Quality.** The teaching is accomplished with the help of information and digital technologies, where the teachers themselves are not of great expertise. Consequently, the issue of improving multimedia software design is an important topic facing distance education.

2. Uncertain policy direction regarding distance education. There is still an ambiguity in the way distance education is promoted and the direction it should take. Distance education may be a breakthrough for some professions, but for other students, face-to-face or blended learning remains mandatory.
3. The lack of resources and copying of similar projects. The lack of resources is now a common problem in Ukraine's educational industry. A large amount of entrepreneurs create several schools with the same approach to the educational process, teaching and learning facilities, and software. This leads to a great loss of resources. To better understand distance education, in order to help teachers change instructional approaches, and to explore teaching methods, the new educational environment should be perceived with a positive attitude. Students, in turn, should be comfortable with distance learning, they should have basic skills in the information-digital environment. After all, if students do not know modern technologies or have no access to the Internet, distance education will not be successful. Therefore, the primary task for creating a modern distance education is to teach modern technologies, to inoculate independence, and responsibility, and to provide easy access to educational resources.

6. Bibliographic references

- Ahmed, A., Bhatti, S. H., Gölgeci, I., & Arslan, A. (2022). Digital platform capability and organizational agility of emerging market manufacturing SMEs: The mediating role of intellectual capital and the moderating role of environmental dynamism. *Technological Forecasting and Social Change*, 177(121513), 121513. <https://doi.org/10.1016/j.techfore.2022.121513>
- Al Lily, A. E., Ismail, A. F., Abunasser, F. M., & Alhajhoj Alqahtani, R. H. (2020). Distance education as a response to pandemics: Coronavirus and Arab culture. *Technology in Society*, 63(101317), 101317. <https://doi.org/10.1016/j.techsoc.2020.101317>
- Bailey, A. L., Martínez, J. F., Oranje, A., & Faulkner-Bond, M. (2022). Introduction to twin pandemics: How a global health crisis and persistent racial injustices are impacting educational assessment. *Educational Assessment*, 27(2), 93–97. <https://doi.org/10.1080/10627197.2022.2097782>
- Baldwin, S. J., Ching, Y.-H., & Friesen, N. (2018). Online course design and development among college and university instructors: An analysis using grounded theory. *Online Learning*, 22(2). <https://doi.org/10.24059/olj.v22i2.1212>
- Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, 2(2), 113–115. <https://doi.org/10.1002/hbe2.191>
- Bauer, J. M. (2022). Toward new guardrails for the information society. *Telecommunications Policy*, 102350. <https://doi.org/10.1016/j.telpol.2022.102350>
- Chick, R. C., Clifton, G. T., Peace, K. M., Propper, B. W., Hale, D. F., Alseidi, A. A., & Vreeland, T. J. (2020). Using technology to maintain the education of residents during the COVID-19 pandemic. *Journal of Surgical Education*, 77(4), 729–732. <https://doi.org/10.1016/j.jsurg.2020.03.018>
- Damşa, C., Langford, M., Uehara, D., & Scherer, R. (2021). Teachers' agency and online education in times of crisis. *Computers in Human Behavior*, 121(106793), 106793. <https://doi.org/10.1016/j.chb.2021.106793>

- Demuyakor, J. (2020). Coronavirus (COVID-19) and online learning in higher institutions of education: A survey of the perceptions of Ghanaian international students in China. *Online Journal of Communication and Media Technologies*, 10(3), e202018. <https://doi.org/10.29333/ojcm/8286>
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5–22. <https://doi.org/10.1177/0047239520934018>
- Hjelsvold, R., Nykvist, S. S., Lorås, M., Bahmani, A., & Krokan, A. (2020, November). Educators' experiences online: How COVID-19 encouraged pedagogical change in CS education. In *Norwegian ICT conference for research and education*, No. 4. <https://ojs.bibsys.no/index.php/NIK/article/view/817>
- Ministry of Education and Science of Ukraine (2021, May 25). Concept of digital transformation of education and science: MES invites public discussion. <https://mon.gov.ua/ua/news/koncepciya-cifrovoyi-transformaciyi-osviti-i-nauki-mon-zaproshuye-do-gromadskogo-obgovorennnya>
- Law No. 1556-VII. On higher education, dated 01.07.2014 (2014, December). Retrieved from <https://zakon.rada.gov.ua/laws/show/1556-18#Text>
- Liguori, E., & Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. *Entrepreneurship Education and Pedagogy*, 3(4), 346–351. <https://doi.org/10.1177/2515127420916738>
- Liu, P., Wang, X., Teng, F., Li, Y., & Wang, F. (2022). Distance education quality evaluation based on multigranularity probabilistic linguistic term sets and disappointment theory. *Information Sciences*, 605, 159–181. <https://doi.org/10.1016/j.ins.2022.05.034>
- Luna, C., & Victor, M. (2021). The digital society as a determining factor in mobility, urban dynamics and current cities structure. *Transportation Research Procedia*, 58, 423–430. doi: 10.1016/j.trpro.2021.11.057
- Massimo, R., & Muschert, G. W. (Eds.). (2017). *Theorizing Digital Divides*. Routledge. <https://doi.org/10.4324/9781315455334>
- Ministry of Education and Science of Ukraine (2022, April 15). The Strategy for the Development of Higher Education in Ukraine for 2022-2032. <https://mon.gov.ua/ua/news/opublikovano-strategiyu-rozvitku-vishoyi-osviti-v-ukrayini-na-2022-2032-roki>
- Ogonowski, P. (2020). Application of VMCM, to investigate, the dynamics of changes information society development. *Procedia Computer Science*, 176, 3182–3190. <https://doi.org/10.1016/j.procs.2020.09.131>
- Ratten, V. (2022). Digital platforms and transformational entrepreneurship during the COVID-19 crisis. *International Journal of Information Management*, 102534. <https://doi.org/10.1016/j.ijinfomgt.2022.102534>
- Shevchenko, V. V. (2019). The reform of the higher education of Ukraine in the conditions of the military-political crisis. *International Journal of Educational Development*, 65, 237–253. <https://doi.org/10.1016/j.ijedudev.2018.08.009>
- Topuz, Ş., Yılmaz Sezer, N., Aker, M. N., Gönenc, İ. M., Öner Cengiz, H., & Er Korucu, A. (2021). A SWOT analysis of the opinions of midwifery students about distance education during the Covid-19 pandemic a qualitative study. *Midwifery*, 103(103161), 103161. <https://doi.org/10.1016/j.midw.2021.103161>

- Wlodarczyk, J. R., Wolfswinkel, E. M., & Carey, J. N. (2020). Coronavirus 2019 video conferencing: Preserving resident education with online meeting platforms: Preserving resident education with online meeting platforms. *Plastic and Reconstructive Surgery*, 146(1), 110e–111e. <https://doi.org/10.1097/prs.0000000000007073>
- Yu, J. L., Cho, D. Y., DeSanti, R. L., Kneib, C. J., Friedrich, J. B., & Colohan, S. M. (2021). Resident experiences with virtual education during the COVID-19 crisis. *Journal of Plastic, Reconstructive & Aesthetic Surgery: JPRAS*, 74(8), 1931–1971. <https://doi.org/10.1016/j.bjps.2021.05.037>