A New Model of Knowledge Acquisition: Distance Education

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Abstract

Taking into consideration the growing pace of globalization and the development of the technological sphere, it is significant to pay particular attention and use the ability of modern information technologies in order to significantly improve the quality and efficiency of education. Currently, the concept of distance education is gradually developing and spreading at all levels of the educational system. It involves the application of various technological achievements, such as: systems of synchronous, asynchronous, mixed acquisition of knowledge, the use of Internet platforms, multimedia solutions and the latest systems for organizing the educational process.

Distance learning is the most flexible and affordable type of organization of classes. In addition, this type of learning meets the requirements of the new educational paradigm of the information society, namely: the support of open, person-oriented and continuous training of a person throughout his life; implementation of mass education of all strata of the population, regardless of their place of residence; diversifying and improving the process of acquiring knowledge by meeting the diverse needs of students from different social and demographic groups.

The purpose of the article is to clarify the features of the use of distance education tools as a modern learning paradigm, their advantages and disadvantages, to study individual practical aspects of the use of distance education and to highlight the most promising directions for the development of this type of organization of the educational process.

Methodology. In the course of writing the academic paper, an analytical method of working with materials was used on applying distance form of learning, as well as a questionnaire survey for practical clarification of certain aspects of distance learning from the viewpoint of its participants.

Results. The viewpoint of scientists regarding the features of distance form of learning, its components, advantages and disadvantages was studied, as well as the standpoint of the participants of the educational process regarding the features of using distance education was clarified.

Keywords: distance education, distance form of learning, self-study, synchronous learning, asynchronous learning, electronic tools of the educational process

1. Introduction

Over the last two decades, the process of transition from traditional education to learning based on computer technologies has been taking place. This became possible primarily due to the development of the Internet, which provided the opportunity to communicate freely online with other network users and to post information on websites, making it available to everyone.

Distance learning, despite several decades of its development, only recently has quite actively entered our lives. While it was previously believed that the use of distance education primarily provides an unprecedented (compared to other forms of education) speed of updating knowledge with the support of information resources selected by students from global and national electronic information networks, then, under the conditions of the global development of the information society, distance learning has become an important way to organize the educational process. Distance learning is one of the leading global trends in modern education. This technology implements the principle of continuous further education, and it is able to satisfy the constantly growing need for knowledge in the information society.

In the theoretical chapters of the academic paper, the concept and essence of distance learning has been analysed; the benefits and drawbacks of using the distance form of education have been considered; at the same time, the possibilities of distance education have been substantiated in order to overcome the shortcomings of the traditional educational process.

The practical part of the research includes elucidating the advantages and disadvantages of the distance type of organizing the educational process, the most effective types of communication in distance learning, the criteria that the distance education system must meet, its problems and directions for the further development of distance learning in order to improve the quality of knowledge acquisition by the education seekers.

The practical part of the research has proven that the main advantages of distance mode of organizing the educational process are the convenience of studying at any time, as well as virtual mobility and the absence of borders. Along with this, the survey participants identified the following constraints and disadvantages of distance form of learning, namely: limited opportunities to understand the individual needs of each student or a pupil, difficulties in verifying knowledge and the need to constantly adapt educational materials to distance learning. The research has shown that the most effective types of communication in distance learning are synchronous, blended distance learning and mixed mass open online courses. At the same time, the criteria that must be met by all types of distance learning are technical accessibility for teachers and students, compliance with program learning outcomes, clear criteria for assessing acquired competencies.

The survey has made it possible to establish that the most important problems of distance education are the lack of a perfect regulatory and legal framework, developed high-quality means of pedagogical and methodical support, a decrease in the quality of training of education seekers. The survey has revealed that the participants of the distance learning process consider the improvement of the quality of the organizational work of the educational system, fostering the need for education seekers to improve their knowledge / skills, and the optimization of communication processes in the information society during studying to be the most significant directions for the further development of distance learning.

2. Literature Review

Distance education is a systematically organized educational process aimed at the fullest possible self-fulfilment of an individual, the development of his professional abilities and personal skills, including the ability to organize and direct his studies. Distance education is intended to provide an opportunity to carry out the educational process continuously and in an autonomous mode, while focusing educational resources on meeting the education seeker's needs (Bozkurt, 2019; Bušelić, 2017; Delcker & Ifenthaler, 2022).

Based on a systematic analysis of the concept of distance learning, it can be determined that the majority of researchers have identified and scientifically argued its components, namely:

- conducting the educational process in parallel (synchronous) and non-simultaneous (asynchronous) form;

- the identification of individual organizational forms, as well as the special content, goals, educational materials, and methodological basis of this type of organization of the educational process;

- feature of the subject of study;

- application of ICT tools (Abel & Alvarez, 2020; Orr, Weller, & Farrow, 2019; Panigrahi, Srivastava, & Sharma, 2018; Potgieter, Pilcher, Tekane, Louw, & Fletcher, 2019).

At the same time, it should be noted that, in general, the distance education system is by no means a method of replacing an educator or a teacher with computer resources, but a special way of interaction between education seekers and teachers based on information and communication technologies (Weller, Jordan, DeVries, & Rolfe, 2018; Wang, Minku, & Yao, 2018).

An important feature of the development of modern education is its global character. It reflects modern integration processes among states in various spheres of social life. Education is moving from the category of national priorities of highly developed countries to the category of global ones. The developing universal distance education system offers broad international access to the world's best educational resources; it significantly increases the possibilities of traditional education by creating a pedagogical information environment in which a pupil or a student can study the material of interest to him independently or under the guidance of a teacher; it expands the circle of persons for whom educational resources become available; it promotes the acquisition of independent work skills; it reduces the cost of education due to the wide availability of the best educational resources; it increases the level of educational programs by offering alternative programs; it allows creating unique educational programs by combining courses offered by educational institutions, including those from different countries; it is of great social importance, forasmuch as it provides a possibility to fully satisfy the educational needs of the population, which have transformed and grown significantly (Mahasneh, Al-Kreimeen, Alrammana, & Murad, 2021).

The introduction of distance learning makes it possible to solve the problem of searching for an effective educational system in modern conditions; it provides opportunities for obtaining continuous education of any level and quality; it creates conditions for the continuous self-development of any person, regardless of age, gender, state of health and financial situation, individual psychological features, etc.

3. Aims

The purpose of the study is to study the point of view of the participants of the educational process, during which distance learning is applied, regarding the disadvantages and advantages of distance education, the most effective types of communication, and the most important problems and directions for the further development of distance learning in the future.

4. Materials and Methods

A practical study of the features of distance learning in the educational process was carried out by interviewing 192 teachers, 411 students, as well as 89 methodologists of educational institutions engaged in the organization of the educational process in 42 educational institutions of secondary and higher education in the Zhytomyr, Ivano-Frankivsk, Vinnytsia, Poltava and Kyiv regions of Ukraine. The research was conducted using the Survey Planet service.
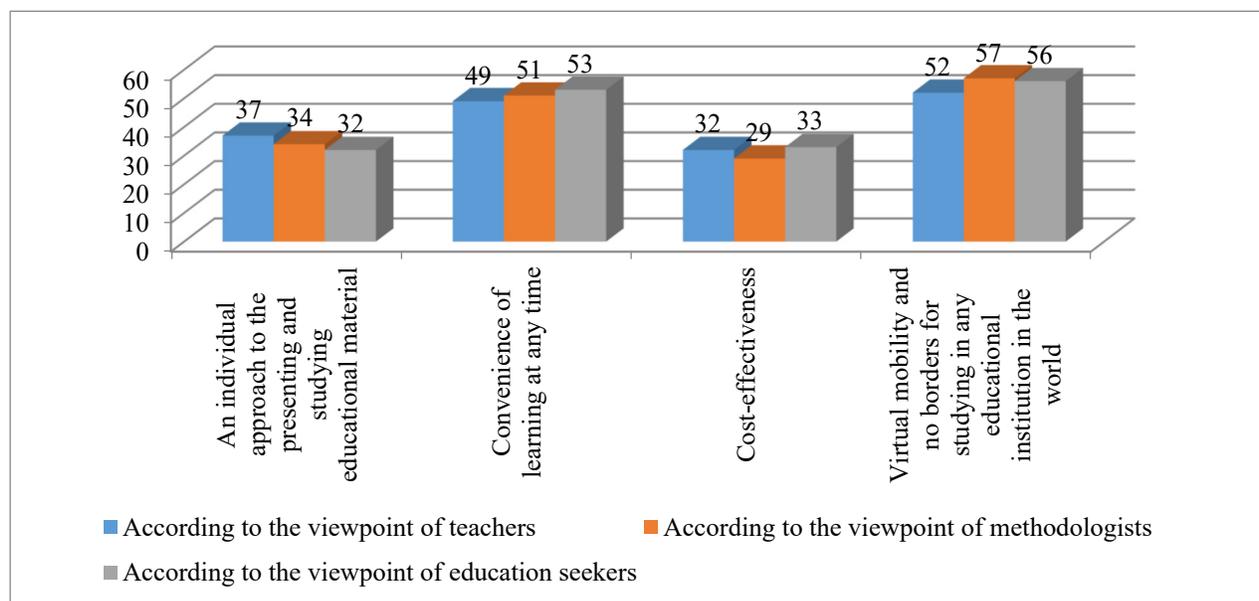
5. Results and Discussion

Figure 1. The Advantages of the Distance Type of Organization of the Educational Process, %

Source: compiled by the authors.

The survey has revealed that both specialists on methodological support and teachers using distance form of learning in their work have identified the following advantages of this type of organization of the educational process (Figure 1).

According to the results obtained from the survey participants, the most significant advantages are as follows: the convenience of studying at any time, which creates an opportunity for the student to independently organize his educational process, to refer to the repetition of materials or related disciplines, as well as virtual mobility and the absence of borders, which allows him to acquire education regardless of location in any educational institution in the world.

During the survey, the respondents have identified particular constraints and disadvantages of distance form of learning, from among which, the following ones should be highlighted (Figure 2).
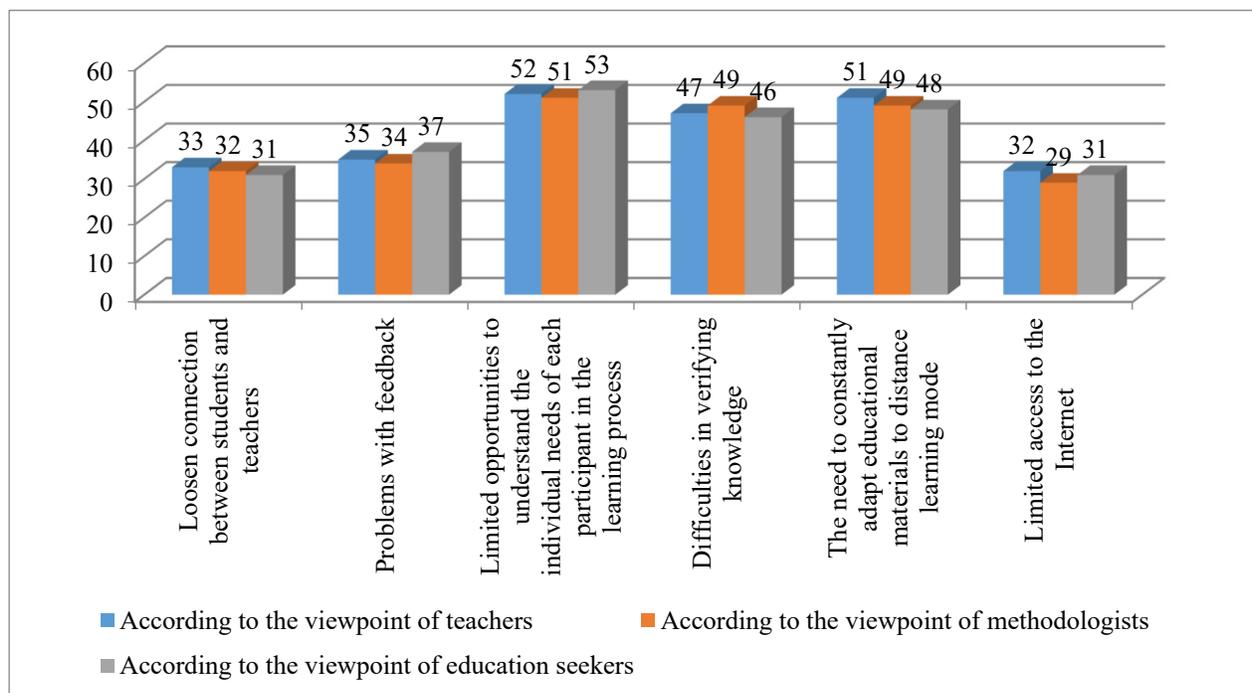

Figure 2. Disadvantages of Distance Form of Learning, %
Source: compiled by the authors.

− limited opportunities to understand the individual needs of each participant in the educational process;

− difficulties in verifying knowledge;

− the necessity to constantly adapt educational materials to distance learning.

An important result of the conducted research was the clarification of the opinion of the respondents regarding the most effective types of communication during distance learning (Figure 3).

The survey has showed that there is no significant difference in the evaluation of these types of communication by the participants of the distance learning process; at the same time, the respondents rated somewhat higher synchronous, blended distance learning and mixed mass open online courses.

During the research, respondents were asked to identify the main criteria that all types of distance learning should meet. According to the survey participants' viewpoints, the most significant ones are as follows (Figure 4).
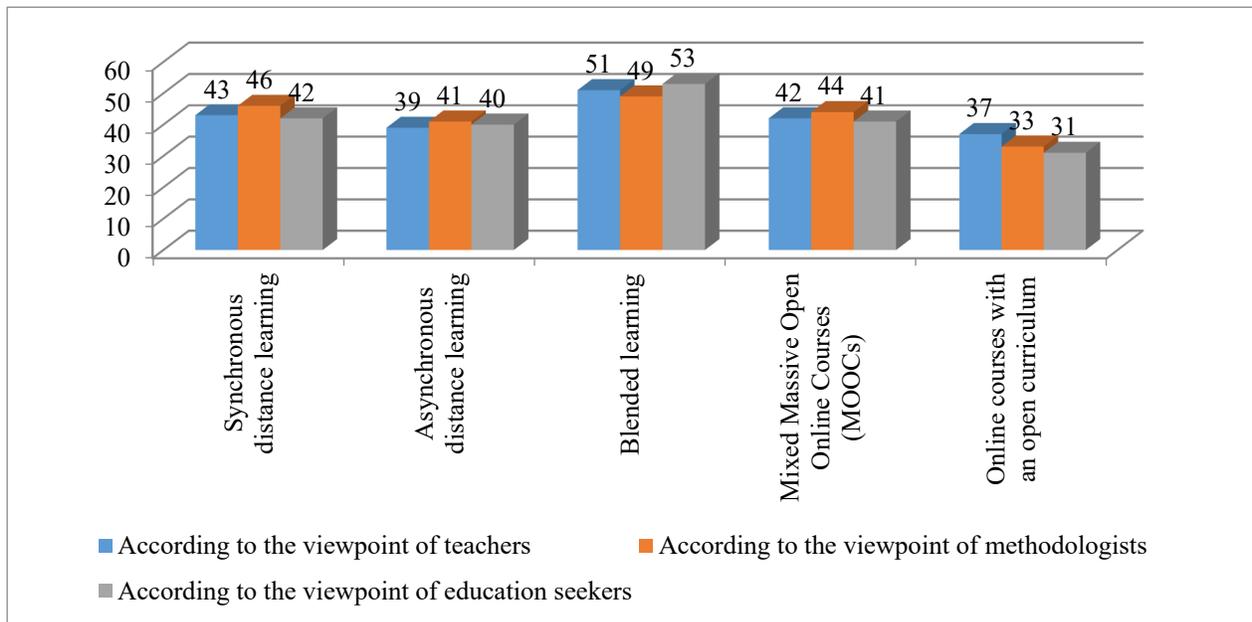
Figure 3. The Most Effective Types of Communication in Distance Learning, %
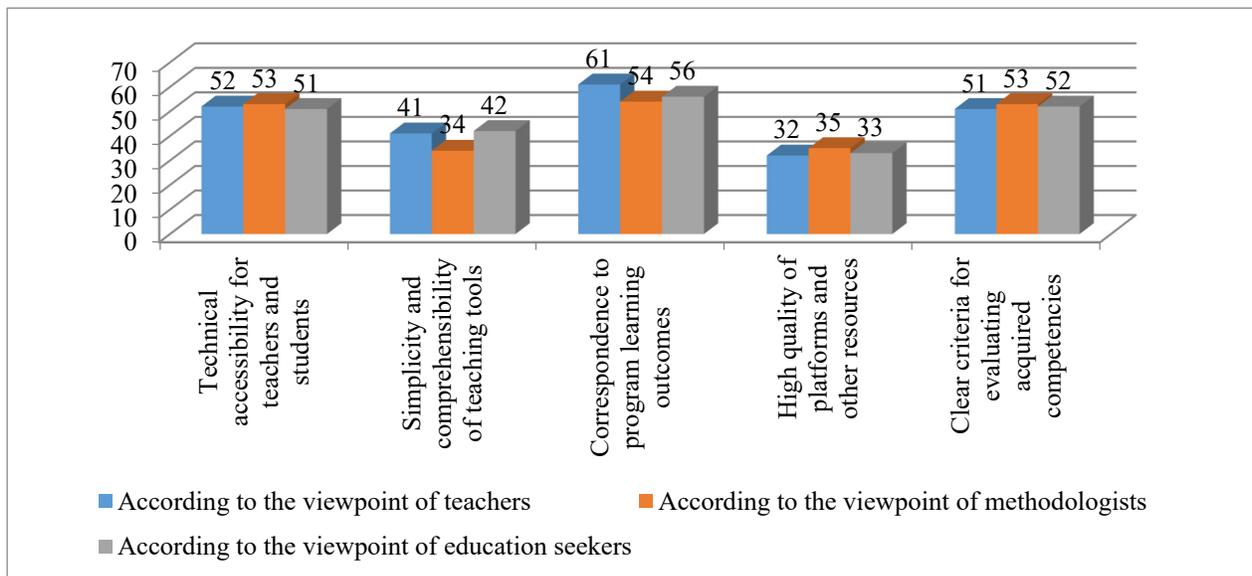
Source: compiled by the authors

Figure 4. The Main Criteria That the System of Distance Learning Should Meet, %
Source: compiled by the authors.

− technical accessibility for teachers and students;

− compliance with program learning outcomes;

− clear criteria for evaluating acquired competencies.

The most important problems of distance education, which, according to the survey participants' standpoint, should be eliminated and solved, include as follows (Figure 5).
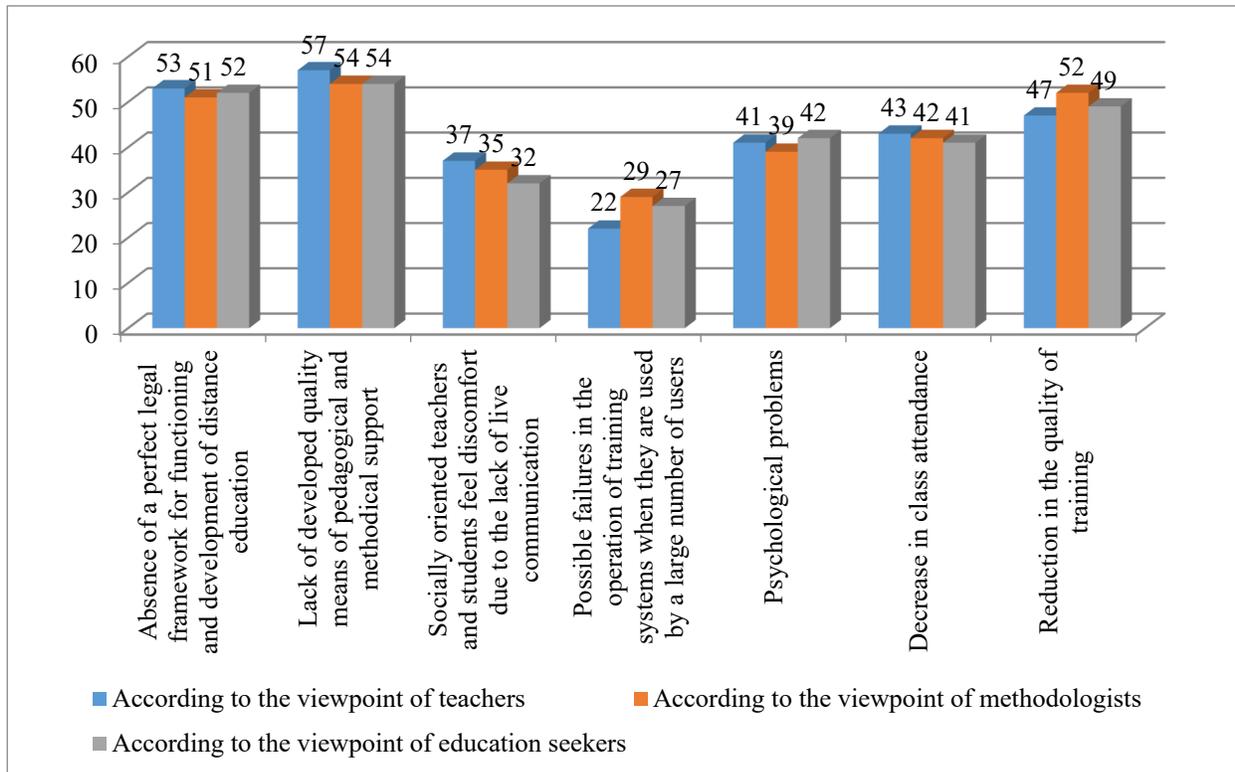
Figure 5. The Most Important Problems of Distance Education, %
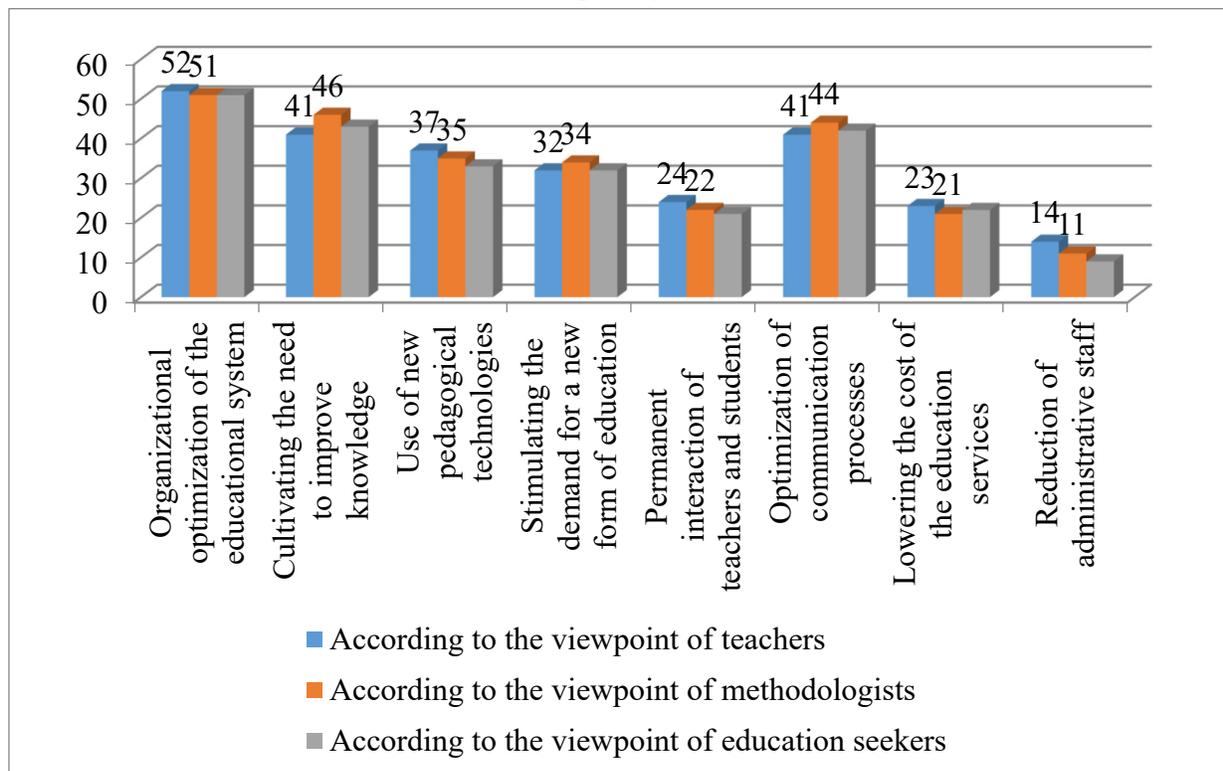Source: compiled by the authors.

Figure 6. Directions for the Further Development of Distance Learning in order to Improve the Quality of the Process of Acquiring Knowledge by Education Seekers, %

Source: compiled by the authors.

    −   lack of a perfect legal framework for the functioning and development of distance education;

    −   lack of development of quality means of pedagogical and methodical support;

    −   decrease in the quality of training.

According to the survey participants' viewpoints, the most significant directions for the further development of distance learning in order to improve the quality of the process of acquiring knowledge by education seekers are as follows (Figure 6).

    −   improving the quality of organizational work of the educational system;

    −   fostering the need of education seekers to improve their knowledge/skills;

    −   optimization of communication processes in the information society during education.

Thus, distance learning is a new way of organizing the educational process, the participants of which are separated in space.

Within the framework of this study, the point of view of respondents regarding the degree of active use of distance learning tools and their assessment of the level of digitalization of society in different time periods, namely in 2018, 2020 and 2022, was clarified. The correlation of the data of the two indicators in the dynamics is shown in Figure 6.
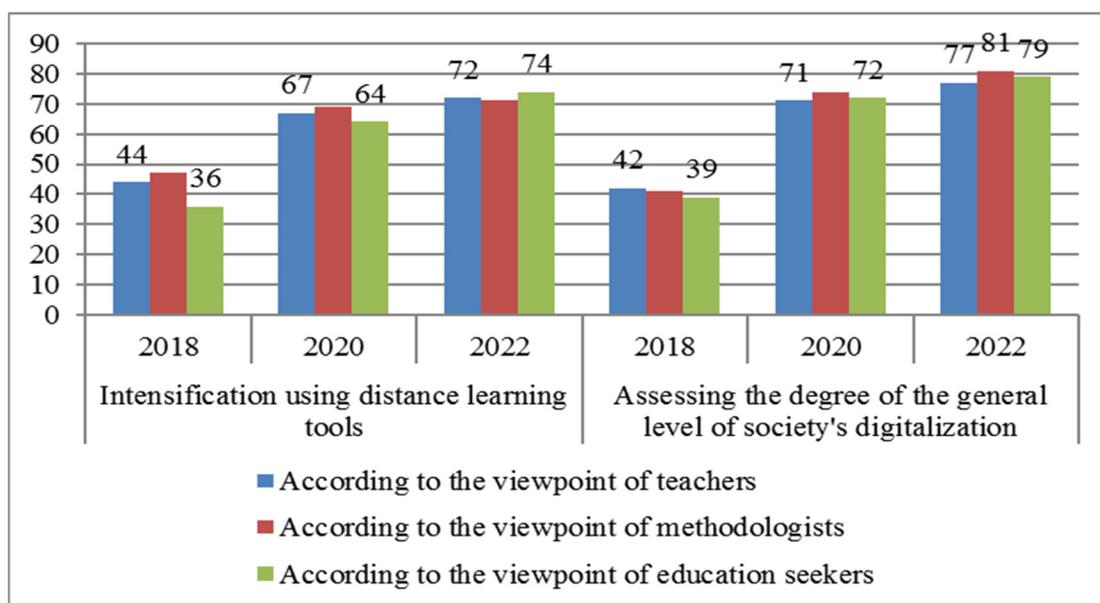

Figure 7. The Activity of Using Distance Education in Relation to the Level of Digitalization of Society, %

Source: compiled by the authors.

As can be seen from Figure 6, both the degree of the general level of digitalization of society and the intensification of distance learning in 2020-2022 have significantly increased compared to 2018. The intensification of the spread of COVID-19 and Russia's war against Ukraine had a significant impact on such rapid dynamics of these indicators, as a result of which a large number of educational institutions of various levels were destroyed, and a significant number of applicants were forcibly resettled outside the country.

After all, as in any activity, the ultimate goal of any process is to achieve the set goals, for which it is worth choosing the optimal structure of means and tools.

In general, the theoretical and methodological fundamentals of distance learning clarified by us confirm that this type of organizing the process of acquiring knowledge has significant advantages over face-to-face learning, namely:

    −   in the operational aspect (overcoming space and time barriers, obtaining up-to-date "fresh" information, quick feedback);

- as a more informative type of knowledge acquisition (increased availability of educational information hosted on specialized servers, provided to students through interactive web channels, published in conference calls, mailing lists and other means of the Internet);

- as a more effective means of communication (the number of potential study participants, teachers, students, specialists who quickly interact with each other via electronic networks is increasing; restrictions on conducting Internet classes are being removed);

- from a pedagogical point of view (due to the specificity of long-distance and international telecommunications, learning becomes more motivated, interactive, technological, as well as individualized);

- from a psychological point of view (compared to traditional methods of education, distance learning creates more comfortable emotional and psychological conditions for self-expression of pupils or students, eliminating psychological barriers and problems, mistakes in oral communication);

- economical (students and teachers have the opportunity to allocate time for classes in a schedule and pace convenient for them, to select and use the most suitable equipment and computer equipment for conducting classes) (Gok & Gokcen, 2020; Ayebi-Arthur, 2017; Elfadni & Abdelrahman, 2020; Ferraro, Ambra, Aruta & Iavarone, 2020).

Systematic and high-quality use of distance education technologies guarantees educational institutions the following:

- significant increase in the subjects of educational programs;

- organization of the educational process for a wide audience, involving a fair amount of students in the educational process;

- significant reduction in the cost of organizing training;

- significant improvement in the quality of education due to the use of Internet libraries, the application of the latest ICT, an increase in the period of time allocated for the independent work of students;

- organization of a single (universal) informational and educational space of an educational institution (Zinovieva, Artemchuk, Iatsyshyn et al, 2021).

Depending on the means of communication between teachers and students, the following distance learning methods are distinguished:

- a training method that uses student interaction with educational resources with minimal involvement of the teacher.

- a method of individualized training.

This can be implemented through such technologies as telephone, voice mail, e-mail, Skype.

- a method based on teaching the educational material by the teacher. At the same time, students do not play an active role in communication.

- a method characterized by active interaction of all participants in the educational process (Lassoued, Alhendawi, & Bashitialshaaer, 2020).

Therefore, the conducted survey and analysis of scientific sources on the development of distance learning as the newest paradigm of the educational system has made it possible to note that in order to use the potential opportunities of distance learning as fully as possible, information and technical means are applied in the distance education system, which are developed on the basis of the latest ICT, communication networks and systems and are used by education seekers remotely under the guidance of a tutor.

In current conditions, at a time of globalization of the educational system, the Internet is an educational space that opens up wide opportunities for students' access to information resources and productive cooperation (Mahasneh, 2020).

6. Conclusions

Thus, the analysis of the scientific literature on the research topic and the results of the survey have established that the introduction of distance learning technologies into education will contribute to obtaining a qualitatively new educational product. Significant expansion of the informational educational environment, increasing the

communication opportunities of students and teachers with colleagues from other educational institutions, access to global information resources – all this contributes to the growth of students' motivation to study, strengthening their creative self-fulfilment, mastering the skills of working with telecommunication tools, which are important prerequisites for high-quality life in the information society.

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