

# Principles of Organizing Independent Work of Students in the Context of Distance Learning

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## Summary

Currently, distance learning and higher education are in the process of adapting to the changes taking place in society. New information technologies are beginning to define the essence of the educational environment. Distance education of the new generation gives students the opportunity to be autonomous learning subjects, which will significantly change the usual teacher-student relationship. Thus, we can talk about the essence of the idea of cognitive independent activity of students by means of distance learning as a necessary condition for improving the quality of extracurricular educational process, which is an integral component of the educational process in higher education institutions and the integrated use of students' reserve opportunities in self-study. To activate independent work of students in the educational process of higher education, it is necessary to take into account a number of factors. These include: problematization, integration and dialogization of educational content; research and personality-oriented approaches to the organization of independent work of students; creative orientation of independent activities; the use of Information Technologies. The characteristic features of distance learning are noted. Distance learning as an innovative technology has a huge systemic effect on all components of the pedagogical process, the overall structure and activities of the pedagogical community as a whole. A student's creative position, which prevents them from simply assimilating unfiltered information, is a necessary condition for personal-oriented distance education. With the purpose of implementing such a focus in distance learning, to activate the independent work of students in the modern educational process of higher education, is to define the principles of distance learning.

## Keywords:

*distance learning, principles, organization of independent work, students, features of distance learning, innovative technology, higher education.*

## 1. Introduction

Information technologies provide great opportunities for the development of professional skills and intellectual potential in future specialists. It is necessary to use these advantages as much as possible. [3]

As noted: A. Kuzminskyi, O. Kuchai, O. Bida, A. Chychuk, I. Sihetii, T. Kuchai, one of the priority areas of the higher school modernization program during the COVID-19 pandemic is distance learning, which is possible due to the existence of information, educational technologies and communication systems, especially for effective education and its monitoring in higher educational institutions. During the COVID-19 pandemic, the role of the teacher also changes significantly in the educational process. It is entrusted with such functions as coordinating the cognitive process, adjusting the course being studied, advising students during the ordering of the individual curriculum, managing their educational projects, evaluating students' knowledge and conducting monitoring [5].

The modern level of development of information and communication technologies brings distance learning to a completely different qualitative level of development, which allows you to provide the effect of direct communication between the teacher and the student, which is always an advantage and a distinctive feature of full-time

learning. Thus, a new stage in the development of distance education allows us to talk about a new form of it that integrates the systems of full-time and part-time education that existed earlier. To a large extent, it is new technological and educational opportunities that have initiated the rapid development of the distance education system in recent decades.

One of the main features of distance learning is its multi-environment. Distance education focuses on the diverse enjoyment of students in the course of training courses.

**Purpose of the article.** To reveal the principles of organizing independent work of students in the conditions of distance learning.

## 2. Analysis of recent research and publications

Kuzminskyi A., Kuchai O., Bida O., Chychuk A., Sihatii I., Kuchai T. consider the features of distance education from the point of view of communication between teacher and student, which allows you to form a number of advantages of distance education in comparison with traditional training and its monitoring: advanced educational technologies; availability of information sources; individualization of training; convenient consulting system; democratic relations between student and teacher; convenient schedule and place of work [5].

Semenikhina O., Yurchenko A., Sbrueva A., Kuzminskyi A., Kuchai O., Bida O. investigated that during the COVID-19 pandemic, we have a large number of courses on foreign open resources and not enough in Ukraine, but such courses are being developed and open educational resources in Ukraine are being started, but slowly. This is confirmed by the Ukrainian platforms Prometheus and OUM (Open University of Maidan), which offer a small number of courses. [9].

Malykhin A. substantiated the theoretical and methodological foundations of organizing independent educational activities of students of higher educational institutions [6].

Umrik M. proposed the organization of independent work of future computer science teachers in the conditions of distance learning of computer disciplines [11].

Kravchenko, T., Varga, L., Lypchanko-Kovachyk, O., Chinchoy, A., Yevtushenko, N., Syladii, I., & Kuchai, O. highlight the many forms of innovations implemented in improving the professional competence of a specialist are listed: improvement (rationalization), modernization, innovation. Modernization of computer technologies, especially multimedia ones, is a necessary condition for the functioning of specialists in modern society, since specialists are at the center of the educational process, during the improvement of professional competence [4].

Plakhotnik, O., Strazhnikova, I., Yehorova, I., Semchuk, S., Tymchenko, A., Logvinova, Ya., & Kuchai, O. reveal

the importance of multimedia teaching tools, which are promising and highly effective tools that allow the teacher not only to present an array of information in a larger volume than traditional sources of information, but also to include text, graphs, diagrams, sound, animation, video, etc. in a visually integrated form [7].

Shchyrbul, O., Babalich, V., Mishyn, S., Novikova, V., Zinchenko, L., Haidamashko, I., & Kuchai, O. illustrate that relevant concepts of media education, developed form an important basis for the modernization of education, which will contribute to the construction of an information society in the country and the formation of civil society. Distance learning is considered - the most democratic form of education that allows broad segments of society to get an education [10].

Boyko N. presented the organization of independent work of students of higher educational institutions in the conditions of using information and communication technologies, which will contribute to the formation of a positive attitude to further education and encourage independent research at a qualitatively higher level [2].

Zhevakina N. formed the pedagogical conditions for organizing distance learning for students of Humanities at the Pedagogical University [12].

## 3. Research methods

To achieve this goal, the following research methods are used: theoretical (analysis of philosophical, pedagogical, psychological literature), which allows us to justify the initial provisions of the study; interpretative and analytical method, on the basis of which sources are studied using synthesis, analysis, systematization and generalization.

## 4. Results and discussion

In distance learning, the training course is based on independent study, so the entire order of the educational process should be focused on the management and organization of independent work of the student on the educational material. Note the characteristic features of distance learning:

1. Flexibility – students study at a convenient time, in a convenient place and at a convenient pace. Everyone can study as much as they personally need to master the course of the discipline and obtain the necessary knowledge in the chosen disciplines.

2. Modularity – distance-learning programs are based on the modular principle. Each individual discipline or training course that is studied by students is adequate in the content of a particular subject area. This allows you to create a curriculum from a set of independent training courses that meet individual or group needs.

3. Parallelism – training can be carried out when combining the main professional activity with training, which is "on-the-job".

4. Distance – the distance from the student's location to the educational institution (if communication works well) is not an obstacle to the effective educational process.

5. Asynchrony – implies the fact that in the learning process, the student and teacher work according to a convenient schedule for everyone.

6. Coverage – this feature is sometimes also called "mass character". The number of students ceases to be a critical parameter.

7. Profitability – this feature refers to the economic efficiency of distance learning.

8. The teacher – we are talking about a new role and function of the teacher.

9. Educational – the requirements for the student differ significantly from the traditional ones.

10. New information technologies – the distance learning system uses all types of information technologies, but mainly new information technologies, the means of which are computers, computer networks, multimedia systems, etc.

11. Sociality – distance learning relieves social tension to a certain extent, ensuring an equal opportunity to receive education regardless of the place of residence and material conditions.

12. International – distance learning provides a convenient opportunity to export and import educational services.

These features determine the advantages of distance learning over other forms of education, but, at the same time, put forward certain specific requirements, both for the teacher and for the student, in no case facilitating, and sometimes increasing the labor costs of both.

The development of new innovative technologies will lead to the fact that every employee will need knowledge corresponding to higher education. Therefore, the modern information society sets the task of training specialists who are able to:

- flexibly adapt to changing life situations, independently acquiring the necessary knowledge, skillfully applying it in practice to solve emerging problems;

- independently, critically think, be able to see problems that arise in reality, and look for ways to solve them rationally using modern technologies;

- competently work with information (be able to collect facts necessary for solving a particular problem, analyze them, put forward hypotheses for solving problems, make necessary generalizations, establish statistical patterns, draw reasoned conclusions, apply the conclusions obtained to identify and solve new problems);

- be sociable, contact in different social groups;

- work independently on the development of their own morality, intelligence, and cultural level.

Distance learning as an innovative technology has a huge systemic effect on all components of the pedagogical process, the overall structure and activities of the pedagogical community as a whole.

To activate independent work of students in the modern educational process of higher education, it is necessary to take into account the principles. Let us highlight the most important ones.

The organization of independent educational activities based on the principle of humanization provides for the inclusion of a system of measures aimed at the priority development of general cultural components in the content, forms and methods of independent learning and thus at the formation of personal maturity of students, promoting their self-actualization in this activity and self-realization in the future teaching profession.

The principle of humanization and humanitarization occupies one of the leading places in the system of principles of organizing independent educational activities of students of higher educational institutions, since today these principles reflect the leading trends in the development of education in the modern world and emphasize the growing role and importance of human relations, mutual understanding of the success of education by participants in the educational process as a whole.

Summing up the result of the above interpretations of the principle of humanism, we note that in the process of organizing independent learning activities of students, it means: asserting the student's personality as the highest social value, which determines the leading goals of organizing independent learning activities. The most complete disclosure of his abilities and satisfaction of various cognitive needs through the forms and methods of organizing independent learning activities, ensuring the priority of universal and civil values in the content of independent work; promoting self-actualization of students in the conditions of professionally-oriented independent learning activities, organizing such activities of the teacher and student based on the partnership. Creating opportunities for the implementation of IT students' creativity, implementation of their free choice of content, forms and methods of organizing independent educational activities.

The principle of humanitarization in the organization of independent educational activities of students of higher pedagogical educational institutions means overcoming the utilitarian-economic, technocratic approach in the content, essence of independent work, reflection in it in an accessible form of the world philosophical and general cultural heritage, philosophical and ethical concepts, pedagogical ideas, etc.

The principle of independence in the professional and pedagogical orientation is defined as leading and system-forming, since it is the implementation of this principle that

reflects the specifics of the type of educational activity under study in a higher education institution.

The principle of continuity in the organization of independent learning activities should ensure a gradual transition from the actual school forms and methods of mastering knowledge to active, rational and systematic ones, when the majority of the burden in performing tasks falls on the student. Indeed, along with the assimilation of special knowledge, work aimed at developing rational skills is required. It consists in solving operational and adaptive tasks. The tasks that contribute to the gradual harmonious involvement of students in the educational process in the institution of higher education through the elimination of a low level of content and operational training of the student, incomplete organizational and adaptive competence.

The principle of scientific activity in the organization of independent educational activities of students of higher pedagogical educational institutions is, first of all, that for independent assimilation, knowledge really established by science should be offered, they should be scientifically proven and verified.

Balanced theories should be submitted for independent study, which in most cases are interpreted unambiguously or closely enough by different scientific schools, which will not cause additional difficulties for their assimilation. It is necessary to prevent the introduction of scientific data for independent study that have not found a corresponding and proper reflection in handbooks and textbooks, or contain counterversion statements and provisions without clearly highlighting the most important, priority and practically significant ones.

Compliance with the principle of scientific character will also ensure objectivity in covering the achievements of various scientific schools, especially when it comes to pedagogical schools. Objectively selected scientific information, which is offered to students for independent study, will provide unbiased familiarization with various pedagogical schools, and not just with those within the requirements of which individual teachers, teachers of a particular department or even the teaching staff of the entire educational institution work.

The principle of Science also puts forward certain requirements for the use of teaching methods that are close to the methods of the studied science.

The principle of scientific activity in the organization of independent educational activities ensures compliance of curricula and study program with the level of social and scientific and technological progress regarding the content of educational information that is submitted for independent processing [6].

The principle of science means that the content of teaching any university discipline must correspond to the state of development of the relevant science. Especially relevant is the principle of scientific work in the organization of independent work in the conditions of

mixed distance and classical learning, which involves the use of modern Information Technologies, which in essence must correspond to the current state of education and science. But on the other hand, it is in the context of distance learning that a number of serious problems arise, taking into account which is necessary to ensure an effective educational process [11].

The principle of consciousness and activity of students plays an important role in the organization of independent learning activities, since it expresses the essence of the activity concept: it is impossible to teach a student if he does not want to do it himself. Mastering knowledge and development takes place only if you have your own activity, purposeful efforts aimed at obtaining the planned result.

In the system of organizing independent learning activities, a certain principle is actualized by the acquisition of significant amounts of knowledge, which occurs without direct intervention of the teacher; and it is precisely from the presence and formation of the appropriate level of consciousness and activity of the student that the final result of such educational activities directly depends [6].

The principle of consciousness and independence of learning implies the need for independence in obtaining knowledge and skills, the presence of pupils (students) self-discipline, organization, intellectual concentration, etc. Independent work in the conditions of distance learning allows the student to realize himself as an organizer, designer of his own educational activities, while developing his creativity, initiative, independence, cognitive and mental activity, the ability to organize his own self-education [11].

The principle of systematicity, consistency and rationality of the organization of independent educational activities of students in a higher education institution is based on the following scientific position: a person only has real knowledge when a correct and systematic picture of the external world is displayed in his mind, is a system of interrelated concepts. Traditionally, this principle contains the requirements of logic, consistency and continuity, when each subsequent knowledge or skill is based on the previous one and continues it.

The importance of this principle is due to the statement that the universal tool and the main way of forming a system of scientific knowledge is organized learning in a certain way, in which the system of classroom work and independent learning activities of the student are interconnected and united. In the context of this study, special attention should be paid to the expediency of a balanced association and distribution of general educational material for each individual discipline into modules (relatively completed independent blocks of educational information) that are provided for classroom work and those that are submitted for independent study.

The principle of accessibility and sufficient level of complexity in the organization of independent educational

activities of students of higher pedagogical educational institutions is determined by the need to take into account the real capabilities of students, the rejection of intellectual and emotional overload, which negatively affect the physical and mental state of students.

The principle of connecting theory with practice in the organization of independent learning activities of students is based on the leading position of classical philosophy and modern epistemology: the point of view of life, practice – the main point of departure of knowledge. The effectiveness and quality of training are checked, confirmed and guided by practice. Practice is the only criterion of truth, the source of cognitive activity, and the scope of learning outcomes.

The principles of professional and pedagogical significance of knowledge and professional competence are designed to focus attention on the desire to include as much as possible in the content of independent educational activities of students of higher educational institutions professional and pedagogical significant knowledge in certain four areas of independent educational activity: professional-pedagogical; professional-subject; methodological; general cultural, which will ensure a high level of professional competence of the future specialist, as well as subordinate to the practical implementation and realization of the system-forming principle as a whole. [6].

The principle of visibility requires visualization of educational data, that is, students' visual representation of the object being studied. Computer graphics, the possibility of video and audio presentation of educational materials, modeling of scientific and technical processes and objects – all this increases the effectiveness of educational activities and activates independent work of students in the conditions of distance learning disciplines of the computer cycle. In such conditions, the student must not only understand and remember, but also demonstrate their understanding of the ideas, facts, and theories of the computer science subject area. For this purpose, in a mixed learning environment, the necessary environment is created in which the student, using hypertext capabilities, interactive multimedia, etc., can successfully implement original solutions. The peculiarities of teaching computer science disciplines in a mixed learning environment are not only the created special "learning environment", but also the fact that the "environment" itself acts not only as a learning tool, but also as an object of study.

The principle of individualization is the implementation of a personality – oriented approach. Distance learning provides an "individual trajectory" in learning, student autonomy, characterized by the convenience of choosing the time and place of study, as well as the pace of studying educational material. Communication between students and teachers using distance learning tools (mail, forum, chat) allows you to provide a personal approach in communication such as "one-to-one" (teacher-student), "one-to-many" (student – students or students – teacher).

All this ensures the realization of a high level of individuality in training. Independent work of students will be effective if it is personally significant for them and highly motivated. With this approach, the teacher participates in the student's independent activity indirectly, through the creation of optimal conditions for its flow, through the development of a system of multi-level tasks that allow each student to realize themselves as much as possible. Individualization of students' independent work is also facilitated by the development of several variants of adaptive programs, taking into account the overall course program. [11].

N. Boyko also notes the following principles:

- systematicity and consistency – the system of organizing independent work of students must meet such requirements as gradual complication of work, logical connection between all elements, cause-and-effect relationship, relative logical completeness of each element of the system, step-by-step presentation of material, skill formation, etc.;

- individualization and differentiation – the need to divide students into groups according to qualitative indicators of their independence at each stage of training, the need to take into account the specifics of organizing independent work of strong and weak students, their personal interests and specialization, the need to present at each stage of organizing independent work tasks that would correspond to the level of knowledge and skills of students and take into account their level of development of independent work skills at a certain stage of training;

- interactivity and reflexivity in learning – in the process of organizing independent work of students, the degree of their direct participation in the planning and implementation of a particular educational task should gradually increase. At the same time, the active position of the student is understood as his conscious attitude to performing independent work. They have the right to determine the methods of working on the task themselves and plan the schedule of implementation (taking into account the relevant plans of departments). Also, the student must independently analyze the results obtained in the course of work. Interactivity in this context is considered as the ability to work collectively, to create temporary collectives with more or less clearly distributed roles to perform a particular task;

- optimality and pedagogical expediency is one of the most complex principles, which has many interpretations. In this case, optimality is the use of such types of forms and methods of independent work of students, which contribute to the rapid growth of qualitative indicators of the development of student independence in the shortest possible period of time. It is necessary to offer tasks that provide for students' independent work, while the level of complexity of the task should correspond to the level of development of students' independent work skills and the

level of their knowledge. This, in turn, will contribute to the formation of a positive attitude to further training and encourage independent research at a qualitatively higher level. [2].

The experience of using Internet resources in teaching has revealed the problem of information oversaturation and disorientation of a student who is not yet prepared for productive activities. A student who gets access to Internet information should be able not only to assimilate, but also to create their own educational products.

A student's creative position, which prevents them from simply assimilating unfiltered information, is a necessary condition for personal-oriented distance education. With the purpose of implementing this orientation in distance learning is to define the following pedagogical principles of distance learning:

1. The principle of humanistic learning. This principle is crucial in the system of continuous learning and is reinforced in relation to distance learning. Its materiality consists of:

- in the orientation of training and the educational process as a whole to a person;
- creating the most favorable conditions for students to master socially accumulated experience;
- in mastering the chosen profession for the development and manifestation of creative individuality, high social, moral, intellectual qualities.

2. The principle of choosing the content of Education. The content of distance education should:

- first, meet the regulatory requirements of the state educational standard and market requirements;
- secondly, it should contribute to the creation of a person's information space to ensure the process of self-realization.

3. The principle of ensuring the initial level of Education. Effective distance learning requires a certain set of knowledge, skills, and today also the ability to work and certain abilities. For example, for productive training, the candidate for training must familiarize himself with the scientific foundations of independent educational work, have certain skills in working with a computer, etc. In addition, he must master full basic knowledge of the chosen Information direction.

4. The principle of priority of the pedagogical approach when designing the educational process in distance learning. The essence of this principle is that the design of distance learning should begin with the development of theoretical concepts, the creation of didactic models of those phenomena that are planned to be implemented, their methodological analysis, and the construction of a technological chain of tools that are necessary for implementation. The experience of computerization allows us to state when the pedagogical side is a priority, the system is more effective.

5. The principle of pedagogical expediency of ICT application. It requires a pedagogical assessment of the effectiveness of each step of designing and creating distance learning. Therefore, it is necessary to put in the foreground not the introduction of technologies, but the appropriate content of training courses and educational services, which necessarily involves the transformation of the information received into activities, as well as constant self-control and quality and efficiency control of this process.

6. The principle of compliance of technologies with training. Learning technologies should be adequate to distance learning models. In the process of developing distance learning, new models may appear, which, if necessary, should be included in it. An example of such new models will be object-information or design-information models. These models will use teleconferences, teleconsultations, project work, etc. as organizational forms of training.

7. The principle of learning mobility. It consists in creating information networks, databases and banks of knowledge and data for distance learning, which allows the student to adjust or supplement their educational program in the desired direction. At the same time, it is necessary to preserve information invariant education, which provides the possibility of moving from university to university.

8. The principle of ensuring the protection of information circulating in distance learning. It is necessary to provide organizational and technical means for safe and confidential storage, transmission and the use of the necessary information, ensuring their security during storage, transmission and the use.

9. The principle of non-antagonistic distance learning to existing forms of Education. The projected distance learning will be able to produce the necessary social and economic effect, provided that technologies are integrated into the traditional higher education system, complement and expand its capabilities in order to achieve the highest quality. [8].

At the present stage of Education development, turning to didactics in the field of innovative educational systems, we should talk about the methodology of teaching distance learning, that is, how the system of didactic design is implemented using specific principles inherent in the distance learning system.

N. Zhevakina identifies such significant principles of distance learning:

1. The principle of humanistic learning.
2. The principle of priority of the pedagogical approach when designing the educational process in the distance learning system.
3. The principle of pedagogical expediency of using new information technologies.
4. The principle of selecting the content of Education.
5. The principle of the initial level of Education.
6. The principle of compliance of training technologies.

7. The principle of learning mobility. [12].

M. Umrik considers specific principles of distance learning. The main such principles include:

1. The principle of interactivity. The peculiarity of this principle in the context of distance learning is that it reflects the regularity of communication not only between students and teachers using distance learning tools, but also between students.

2. The principle of initial knowledge. In order to learn effectively in a distance learning environment, it is necessary to have some initial level of training for potential students.

3. The principle of identification. It consists in increased control over the independence of students in distance learning.

4. The principle of regulated training. There is often an opinion that the time of study, in the conditions of distance learning, is not strictly regulated and it is impractical for a student to introduce a schedule of independent work. However, experience shows that on the contrary, there should be strict control and clear planning of school time, especially for junior students.

5. The principle of pedagogical expediency of using new information technologies. This principle is one of the leading pedagogical principles and requires a pedagogical assessment of each step of designing, preparing and organizing training in a distance learning environment.

6. The principle of openness and flexibility of learning. Training takes place at a convenient time, in a convenient place and at a convenient pace for the student.

7. The principle of humanism or humanization of learning. The essence of the principle is the orientation of training and the educational process as a whole to a person, in creating the most favorable conditions for students to master socially accumulated experience, mastering the chosen profession for the development and manifestation of creative individuality, high civic moral qualities, etc.

8. The principle of choosing the content of Education. The content must comply with the regulatory requirements of the state educational standard and market requirements.

9. The principle of learning mobility. It consists in creating information networks, databases and banks of knowledge and data for distance learning, which will allow the student to adjust or supplement their educational program in the necessary direction in the absence of appropriate services in the institution of Higher Education where he is studying. The student gets the opportunity to move from university to university to study in related or other areas.

10. The principle of intensification of the learning process.

11. The principle of activating the student's cognitive activity.

12. The principle of a modular approach to designing the content and organization of the educational process. [11].

D. Bodnenko considers the main principles of distance learning to be:

– flexibility – territorial, age, time, content, methodological, social and communication;

– determining the role of independent work of students against the background of constant cooperation with teachers (tutors);

– interactive orientation of training in interaction between students and teachers (maximally individualized training based on information about the level of knowledge of the listener and his psychological characteristics, first of all, the features of his perception, the style of goal setting and reflection) [1].

## Conclusions

To activate independent work of students in the educational process of higher education, it is necessary to take into account a number of factors. These include: problematization, integration and dialogization of educational content; research and personality-oriented approaches to the organization of independent work of students; creative orientation of independent activities; use of Information Technologies.

Currently, distance learning and higher education are in the process of adapting to the changes taking place in society. New information technologies are beginning to define the essence of the educational environment. Distance education of the new generation gives students the opportunity to be autonomous learning subjects, which will significantly change the usual teacher-student relationship.

Increasing the degree of independence of students in educational activities contribute to: expanding the scope of application of the acquired knowledge and skills at the level of implementation of intersubject connections, the transition from intrasubject connections to intersubject, and then to intercycle (a block of disciplines of the psychological and pedagogical cycle); such a construction of the learning process, in which the transition from the instructions of the teacher is carried out, the need to use some algorithm in solving the educational problem to the independent search for knowledge and mastering the methods of activity; the transition from tasks of the reproductive type to creative tasks, maximally aimed at the self-realization of the student's personality.

Thus, we can talk about the essence of the idea of cognitive independent activity of students by means of distance learning as a necessary condition for improving the quality of extracurricular educational process, which is an integral component of the educational process in higher education institutions and the integrated use of students' reserve opportunities in self-study.

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