

## THE INTERNET AS AN EDUCATIONAL AND COMMUNICATIVE ENVIRONMENT FOR STUDENT YOUTH

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**Abstract:** In modern society today, there is the process of general informatization, which is due to the action of certain "information trends". The leading place in this process is occupied by the emergence and functioning of the global Internet. The rapid development of the global computer network Internet affects various areas of human life and activity. The Internet attracts the active research interest of humanities scientists: sociologists, psychologists, political scientists, economists, lawyers, philosophers. One should note a fairly wide range of humanitarian and scientific problems in the study of the Internet. The relevance of the chosen topic is associated with the rapid development of the Internet and its introduction into various spheres of human life, primarily as a means of mass communication, used, in particular, in the educational and communicative environment. The purpose of the study is to determine the features of the use of Internet channels for the formation and development of educational and communicative environment of student youth.

**Keywords:** Educational environment, Internet, Learning, Smart education.

### 1 Introduction

One of the hallmarks of our time is the unprecedented development of the media. Information is becoming a real social resource, and the whole world is increasingly looking for the outlines of what M. McLuhan called a "global village" [2].

According to traditional notions, communication is the process of transmitting information from the addressee-sender of information to the addressee-recipient of information. In other words, the basis of ideas about communication is the scheme "addressee – transmission of information – addressee".

However, each element of this scheme is changing in the context of mass development of communications in cyberspace. The Internet deals with the traditional scheme "source – message – recipient", sometimes keeps it in its original form, sometimes gives it a whole new character. Communication via the Internet can take completely different forms, from global websites run by major news organizations to folklore music discussion server servers to personal correspondence with friends and colleagues.

The Internet is forcing us to rethink classical definitions and categories of communicative studies. Therefore, when we emphasize that the Internet is a means of mass communication, it becomes clear that neither the word "mass" nor the word "means" can be given a precise definition – the definition depends on the situation.

Prospects for the development of the Internet as a means of mass communication, the role of the Internet in the development of education, the formation of mass Internet culture are still insufficiently studied, which emphasizes the need for further understanding and development of the topic. It should be noted that many of researchers themselves admit that their analysis is far from exhaustive, because the Internet continues to grow, and its audience acquires new features.

The only theory of mass communication has historically developed and is still formed from the scientific approaches, positions and research of many scientists – representatives of both social and natural and technical fields of knowledge. It matured in the field of research in sociology and psychology (G. Tard, G. Lebon – late 19th – early 20th century, L.S. Vygotsky –

30s of 20th century, T. Adorno, G. Lasswell, G. Marcuse, M. Horkheimer, P. Lazarsfeld, R. Merton, etc. – 40s, J. Habermas, S. Moszkovichi, A. Meneghetti, etc. – 60s – 80s of the 20th century).

The origins of the theory of mass communication are in research on the problems of information theory and new science cybernetics (N. Wiener, K. Shannon, S. Beer, etc. – 40s – 50s of the 20th century), scientific developments in the field of information theory, culturology and aesthetics of perception (M. Bakhtin – 30s, A. Mol, Y. Lotman – 60s – 70s of the 20th century), and journalism. In world social science, the most significant contribution to the development of the problem was made by S. Klimenko, V. Urazmetov, E. Dyson, S. Lynch, M. Rose, G. Todino, D. Dougherty, D. Frey, R. Adams, A. Gaffin, B. Kehoe, E. Krol, S. Lambert, W. Hove, T. Berner-Lee.

Since the second half of the 1990s, new information and communication technologies and the Internet have been actively implemented in all spheres of life of the post-Soviet republics and Ukraine in particular. Their opportunities in the process of cultural, socio-economic, and political transformations are of interest to sociologists, political scientists, philosophers, lawyers, economists. Reliable methodological support for the organization of further research is provided, in particular, by the works of Yu.R. Vyshnevsky, E.V. Soil, E.N. Zaborovogo, B.G. Kapustina, A.V. Merenkova, G.L. Orlova, I.K. Pantina, L.L. Rytsova and others.

In connection with the above, the object of study is the educational and communicative environment. The subject of research – the features of the Internet as a specific educational and communicative environment. The aim is to identify the peculiarities of the use of the Internet as an educational and communicative environment by student youth.

To achieve this goal, the following tasks are solved in work:

- 1) Analyzed the concept of the educational and communicative environment;
- 2) Identified the features of the Internet as an educational and communicative environment;
- 3) Analyzed the specifics of modern student youth in the use of the educational and communicative environment;
- 4) Defined the Internet as a resource of the educational and communicative environment;
- 5) Sociological methods explored the role and place of the Internet in student youth's educational and communicative environment (on the example of NTU KhPI).

### 2 Materials and Methods

Theoretical and methodological basis of the work were sociological ideas and concepts of the classics of world sociology, the work of Ukrainian and foreign sociologists, philosophers, psychologists and educators on the problems of mastering Internet communications, monographs and articles by Ukrainian and foreign scientists in the field of virtual communication.

The study was based on the principles of systematicity, comparative approach, objectivity and integrity. Methods of comparative analysis of statistical and sociological data, questionnaires were used.

The empirical basis of the work was the materials of a sociological study devoted to the research of the peculiarities of the use of the educational communication environment of Internet communications by student youth. The study used qualitative and quantitative methods of information collection: the method of included observation; analysis of documents (materials submitted by the administration of educational institutions); questionnaire method.

### 3 Results

Educational and communicative environment is associated with the transfer and exchange of information, and information, in turn, is transmitted in the process of communicative activity the interaction of two or more people, aimed at achieving a common result. Therefore, the educational and communication environment is designed to form the information and communication competence of future professionals. Informative and communicative competence is a synthesis of the concepts of educational and communicative competences. In this case, the educational competence means a system of knowledge, skills and abilities for independent search, analysis and selection of the necessary information, skills in accordance with its organization, transformation, storage and transmission. Communicative competence means knowledge, skills and abilities to interact with others directly or through means of communication [15, 21].

The concept of "educational environment" is complex, multidimensional and subjective. Systematic analysis of the phenomenon of the educational environment occupies one of the most important places in the theory and methodology of sociology of education. However, to date, the definitions by which researchers try to reflect the essence of this phenomenon in the scientific literature is not enough.

As a rule, definitions do not give a complete essential description of this complex phenomenon. To analyze the possibility of the educational environment in the training of a specialist, let us consider this concept in more detail. A large explanatory dictionary of the modern Ukrainian language gives the interpretation of the term "environment" as a set of natural conditions in which the life of any organism [2].

Space in relation to the environment is a construct of the highest order, in which there can be several environments. The construct "environment" reflects the relationship of conditions that ensure human development. In this case, the presence of human in the environment and his interaction with this environment as the subject is implied.

E. Skybytsky and O. Artyushkin consider the educational space as a field of potential opportunities that allows individuals to meet their educational needs, to choose an individual route for education at different stages of their development. In generalized form, under the term "educational space" scientists understand many objects between which relations are established. Educational space is organized as a set of educational systems, and each of them is given a certain place due to the components and functions of the educational system and other factors [17]. K. Kazakova argues that the educational space is a field where the interaction of educational environments is going on [7].

In recent years, the concept of "educational environment" is constantly in the field of interest of scientific research. In one interpretation or another, the concept distinguishes one or more significant, from the point of view of scientists, features of the educational environment. V. Yasvin understands the educational environment (or educational environment) as a system of influences and conditions of personality formation according to a given pattern, as well as opportunities for its development contained in the social and spatial-subject environment [22].

Scientists have determined that the educational environment is a set of material, spatial and objective factors, social components and interpersonal relationships. All these factors are interconnected, complementary, enrich each other and affect each subject of the educational environment, so under educational environment they mean the functioning of a particular educational institution.

E. Belyakova and I. Zakharova define the concept of "educational environment" as a complex system that accumulates intellectual, cultural, program-methodological, organizational and technical resources and provides the formation of personality in its various manifestations. At the same time, the management of the educational environment is

mediated by the target settings of society and the subjects of the educational process [1]. N. Gorbunova believes that the educational environment of higher education can be considered as a means of learning, and as a factor in the successful socio-professional adaptation of the future specialist [11].

Thus, analyzing the above, we can conclude that the educational environment is defined as: a set of conditions and factors, a system of influences and conditions; as a means of learning that contributes to the motivation of students for self-development, self-education and is necessary for the professional development of future professionals.

Belyakova and Zakharova believe that the educational environment as a system consists of the following main components: 1) problem-oriented multilevel information (intellectual, cultural, software and methodological) resources that contain knowledge and technology to work with them (search, storage, processing, application); 2) information infrastructure that ensures the functioning and development of the environment during the educational process [1].

Gaba identifies the structural components of the educational environment: information, social and technological. The information component is full of various professional and educational resources: educational programs, curricula, methodological developments, books, visualized and textual information, information and advertising objects, Internet sites, etc. [2].

The social component is represented by the interaction of different actors (teachers, students, representatives of higher education institutions: social, psychological, methodological, educational, library staff, laboratories, etc.), based on the principle of dialogue, partnership and traditions of higher educational institution.

The technological component includes educational, quasi-professional and professional activities of students, teachers (goals, content, forms of organization, teaching style and nature of control, methods, technologies, etc.), provides various ways and means of acquiring and applying professional knowledge and experience of social relations and serves as a basis for modeling the subject and social contexts of students.

Thus, taking into account the fact that students receive knowledge from the environment, modern educational processes cannot occur without the inclusion of a wide range of information resources, without the development of skills to work with information sources. Therefore, the concept of "educational environment of higher educational institution" has acquired a new status, by which in a somewhat narrow sense we will understand the environment in which the formation of personality, in particular, the professional development of the student, is carried out, that includes teaching aids, both electronic and in paper form, a set of hardware and software for storing, processing and transmitting information that provide prompt access to the necessary data and provide educational scientific communications relevant to the goals and objectives of education and development of science in modern conditions [4, 8, 10]. In this regard, we can consider the selection of those components of the educational environment that will most contribute to the formation of information-analytical competence: motivational-target, information-technological, program-methodical and communication. Each component of the environment is a micro-environment within which students carry out activities of a certain type and the formation of a certain component of information-analytical competence.

Educational environment, according to Slobodchikov, is not a given set of influences and conditions (as presented, for example, in VA Yasvin and SD Deryabo), and dynamic education, which is a systemic product of the interaction of educational space, education management, place of education and the student [21].

As the main structural components of the educational environment, Panov distinguishes: activity (technological), communicative and spatial-subject. The activity component, from the author's point of view, is a space (set) of different activities necessary for the learning and development of students [5]. The communicative component is a space of interpersonal interaction in a direct or subject-mediated form and ways of student interaction with a given educational environment and other subjects. Spatial-subject component implies spatial-subject means, the set of which provides the possibility of the necessary spatial actions and behavior of the subjects of the educational environment. The key concepts here are: territoriality, personalization, place-situation, and so on.

Thus, we can consider the educational environment of higher education as an effective means of forming information and analytical competence of future professionals, as the diversity and structure of educational resources allow using different forms of student work, stimulating their participation in extracurricular activities, encouraging students to analytical activities communication technologies.

Modern forms and means of organizing the educational process in the educational environment of higher education institution, by increasing the clarity of the material, provide high efficiency of classroom and extracurricular work of students. In addition, students develop responsibility for the work performed, creative approach in making appropriate decisions, increase cognitive and creative activity and form the following competencies that are part of information-analytical competence: 1) the ability to set goals and find ways to achieve it; 2) the ability to determine the object, subject and objectives of the study; 3) the ability to independently obtain personally significant information in the shortest time from various sources to meet information needs; 4) the ability to analyze, process, use information to solve problems; 5) know the rules governing the use of intellectual property; 6) the ability to present the results of their own activities [8, 12, 19].

Educational and communication environment of student youth is a set of knowledge, technological and mental entities, which in synchronous integration provide quality mastery of the system of relevant knowledge and communication skills [16].

The educational and communication environment of professional training of a future specialist in a higher education institution is built as an integrated, dynamically renewable multicomponent system, the components of which, providing relevant aspects of training, coordinate the implementation of its tasks at the growing demands of society and the professional community [9, 13, 17]. Educational and communication environment as a component of the educational process can be characterized as follows:

- It contributes to the formation of motivation of the younger generation to consume the content circulating in It;
- It provides access to resources at any time convenient for the person;
- It has a convenient, flexible, friendly, intelligent service that helps people find the necessary information resources, data or knowledge;
- It functions in accordance with the needs of man as much as he needs;
- It ensures the availability of a significant amount of information, which increases with increasing speed;
- It allows organizing almost free, convenient in time contacts between any number of people, to provide a convenient and flexible exchange of information (and in any form) between them;
- It standardizes and integrates the functionality of all previous, now so-called, traditional means of obtaining, storing, processing and presenting the necessary information, data and knowledge to mankind;
- It takes on increasingly more routine operations related to human operations;
- It gains increasingly more control over the data and operational activities of mankind.

For the effective implementation of the educational and communication environment in the educational process of free economic education, both from the student and from the teacher, it is required to have computer literacy, which provides:

- Ability to write and edit information (text, graphics);
- Use computer telecommunication technology;
- Use databases;
- Print information on a printer;
- Ability to compose and send a letter via the Internet;
- The ability to "transfer" information from the network to the hard or floppy disk and vice versa, from the hard or floppy disk - to the network;
- Enter electronic conferences, post own information there and read, download the information available in various conferences;
- Use modern messengers [1].

Thus, we can say that educational and communicative competence is the formed skills for effective interaction in the educational process with the help of information technology. Defining educational and communicative competence as a unity of structural components allows us to consider it as an integrative quality of personality necessary for mastering the methods of working with information, which is why many studies on the formation of information and communicative competence emphasize the importance of identifying its structure.

In this context, E-learning (Electronic learning) is an e-learning system, synonymous with terms such as distance learning, computer-based learning, online learning, virtual learning with the help of information and communication, electronic technologies [6].

In recent years, electronic forms of learning have rapidly become widespread in the educational environment of all levels of education. Network communication and cloud computing technologies have greatly influenced the spread of services and changes in the methodology of the educational process. The information content and capabilities of the services determine the quality of the virtual environment of the higher education institution. The introduction of a virtual environment of the educational institution is carried out in order to [12, 19]:

- Creation of a single communication and educational environment of the higher educational institution;
- Knowledge management, ensuring the continuity of experience within the higher education institution;
- Formation of unified approaches to learning;
- Development of modern corporate culture of higher educational institution [3].

E-learning marked the beginning of the aforementioned smart learning. This is a new philosophy of learning, which is called intelligent learning. It brings together educational institutions, teaching staff to carry out joint educational activities on the Internet on the basis of 19 common standards, approvals and technologies.

It is about sharing and using content. Smart learning is flexible learning in an interactive learning environment with freely available content from around the world.

"Generations of Google", "millennials", digitalnatives all these names emphasize the great role of digital technologies in the lives of today's youth and children.

Digital technologies, first of all, give access to a large amount of different information and the ability to process it quickly. As a result, IT technologies add a new quality to public life, but also create new challenges. Higher education, like education in general, is no exception.

Let us note that SMART education, gaining increasingly more popularity today, is not a separate special way of transferring

knowledge and experience through the formation of professional competencies in the future specialist. SMART education aims to implement the formula of "conscious education". The latter is not only the desired entrant (i.e., he/she is already motivated to study/practice within a particular specialty), but also involves efforts to promote the formation of his/her own professional competencies (extracurricular knowledge, for example) [2, 4].

SMART education does not offer any special techniques, except for one: individual-algorithmic training. Each student enters the university already "at different levels" (they have a different upbringing, psychotype, experience, emotionality, etc.). The aim of the training is to orient them to their own "completion" (everyone will "take" from the discipline only what is necessary what he/she lacks to a separate competence), which is possible by finding an individual learning algorithm for each (this is done by teachers) [17].

On the one hand, modern higher education institutions are becoming part of a single communication system of society that effectively adapts to changes in the global socio-communication environment. Without a website, the process of entry of domestic higher education institutions into the world information space is hardly possible. Through communication processes, society creates an environment – communication and communication space, establishing a boundary between communications, on the one hand, and information on the other. The vastness of the concepts of information and communication determines the global essence of information.

In the space of interaction of these concepts and phenomena, there are relations of information exchange and communication of different levels, which are due to the types of subjects interacting with each other. On the other hand, a modern higher education institution is characterized by the growing importance of its own information environment, which is a set of information, educational documentation, intellectual resources, information technology, communication infrastructure, which contains communications of different categories of subjects [7, 13].

New technologies in education must be used and developed. To solve this problem, Western universities offer a "mixed" form of education, the essence of which is that Internet services and electronic educational technologies are used to support traditional full-time education.

The modern information infrastructure of a higher education institution is strengthened and improved thanks to websites that perform numerous educational, informational, communication functions in society. Internet communications provide access to a wide range of network users to e-learning resources and services, including e-learning documentation [22].

In turn, electronic educational resources are a set of software, informational, technical, normative and methodical materials, full-text electronic educational documentation, including audio and video materials, illustrative materials and catalogs of electronic libraries, which are placed on computer media and on the Internet.

The advantages of SMART-education are that it promotes the development of creative abilities, the formation of professional knowledge, communication skills, literacy in the field of information and communication technologies; forms critical thinking, innovative approaches to solving economic problems; contributes to the improvement of skills of effective cooperation and mutual understanding, leadership, career development. Its conceptual basis is the use of a large number of scientific sources, information and teaching materials and multimedia resources that can be easily and quickly designed, assembled into a set, customized individually for each student with his needs, educational activities and level of academic achievement [14].

The role of the university is also undergoing some transformation. The university should offer its own platform for

the exchange of information, provide technical opportunities for communication between teachers and students, and guarantee the quality of such communication. At the same time, it is a place where colleagues can share experiences, opinions on the effectiveness of certain approaches, together fill and improve the learning platform.

Thus, the process of adapting education to the rapid changes of recent years must be assessed from the standpoint that information and communication technologies did not come to compete or destroy the education system, but to help it become more efficient, enjoying all their privileges.

#### 4 Discussion

Rapid informatization and computerization of society require new knowledge, skills, and abilities that will be adapted to the conditions of the information society. One of the priority areas of informatization of modern society is the informatization of education, which consists in the use of new technologies focused on the formation of communication and educational environment.

At the present stage of development and global changes in the information society, there is the intensive development and use of information technology in all spheres of society, including education. All over the world, the process of forming a digital society with appropriate components is underway. Smart education is gaining wide spread, representing the implementation of educational activities on the global Internet on the basis of common standards, technologies and relationships established between the network of the educational institution and the team of teachers and students.

To achieve this goal, a questionnaire survey was conducted in which 1240 students of the National Technical University "Kharkiv Polytechnic Institute" took part. Spontaneous sampling was used in the study. Among the respondents, there were 86% women and 14% men. The distribution of respondents by direction of future profession is shown in Figure 1.

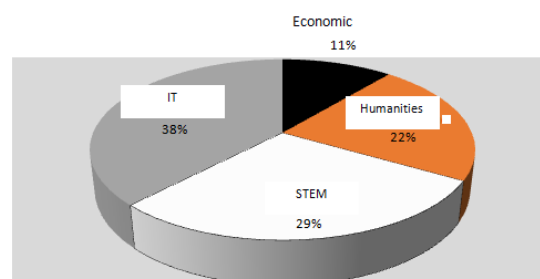


Figure 1 – Distribution of respondents by direction of future profession

In total, 41 – 1–2 year students (34%), 60 – 3–4 year students (48%) and 23 – 5-6 year students (18%) answered the questionnaire; 22% of respondents study on a budget basis, the rest on a contract basis; 2% of those who took part in the survey referred to the group with below average income, 91% – to the group with average income and 7% of those who have income above average.

All respondents, without exception, noted that they use Internet services. In particular, all respondents use the services of Internet channels for training purposes. Table 1 shows convenience of Internet communication channels according to students

Table 1: Convenience of Internet communication channels according to students

	Receiving training materials	Communication with teacher	Self-learning	Development of educational projects	Control of learning outcomes
Email	89%	37%	0%	0%	26%
Internet-conference	5%	79%	16%	37%	11%
Webinar	11%	11%	84%	11%	11%
Electronic learning materials	53%	5%	58%	26%	0%
Electronic libraries	37%	0%	58%	26%	0%
Chat in messenger	47%	74%	11%	26%	42%
Forum	5%	16%	16%	16%	16%

According to the results of the survey, respondents indicated that the most convenient Internet communication channels for receiving educational materials are e-mail, the ability to download electronic initial materials and chat messengers. To communicate with the teacher via the Internet, students most often use Internet conferences and chats in messengers. Meanwhile, such a channel as chat in mobile messengers is relevant for students to control learning outcomes. For the purpose of self-education, students use primarily webinars, various electronic learning materials and electronic libraries. Students also participate in the development of educational projects and for this purpose use primarily Internet conferences. Such a channel of Internet communication as forums in the educational environment does not play any role.

Meanwhile, respondents note that only 68% of respondents had experience of distance learning, with girls 1.5 times more often than boys. In general, students, despite the fact that during the quarantine distance learning was organized at NTU KhPI, only some respondents note that they are involved in this form of education.

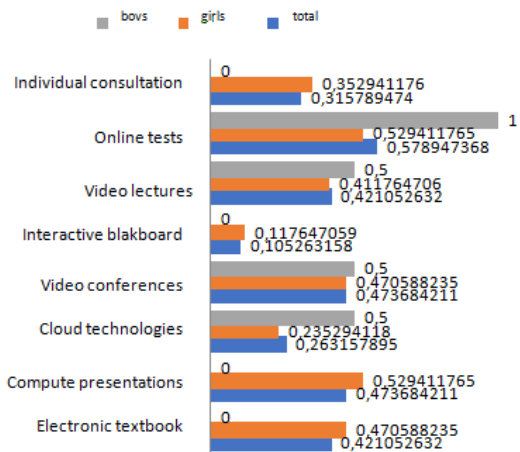


Figure 2 – Distribution of students' assessments on the question "Which of the following methods are most often used by teachers of humanities in the process of your distance learning?"

When answering the question "Which of the following methods were most often used by teachers in the process of your distance learning?" students noted that teachers of humanities most often use online tests, electronic textbooks, computer presentations and video conferences (Figure 2).

According to students, teachers of computer technology use computer presentations, interactive whiteboards, cloud technologies and online tests during distance learning (Figure 3).

Teachers in the disciplines of professional training in the specialization, according to respondents, most often use electronic textbooks, computer presentations, interactive whiteboards, video lectures and individual counseling (Figure 4).

Students also noted separately that teachers use Zoom online conferencing.

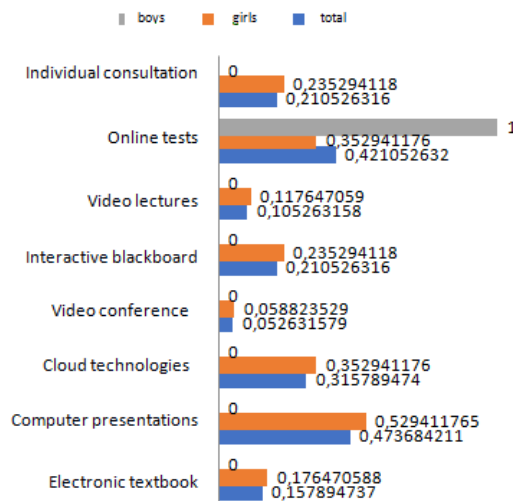


Figure 3 – Distribution of students' assessments on the question "Which of the following methods are most often used by teachers of disciplines in computer technology in the process of your distance learning?"

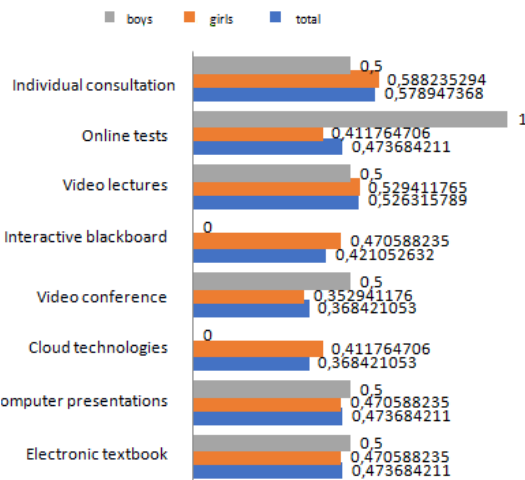


Figure 4 – Distribution of students' assessments on the question "Which of the following methods are most often used by teachers in the disciplines of professional training in the process of your distance learning?"

According to the respondents, the most relevant criteria for distance learning are the possibility of regulating the individual pace of knowledge acquisition and the availability of information regardless of time and distance (Figure 5). At the same time, such criteria as the convenience of acquiring knowledge through distance learning, the ability to communicate with the teacher on-line, the ability to work in parallel with learning and simplification of the system of monitoring results in the learning process are also relevant for boys.

Among the least relevant criteria for distance learning students include experience in using new educational technologies, comfortable conditions for student creativity and the ability to analyze information obtained in the learning process, increase

the level of independence in the development of educational material (Figure 6). Meanwhile, such positions as the ability to regulate the individual pace of knowledge acquisition and stimulate personal development in the opinion of students have not yet reached a certain level.

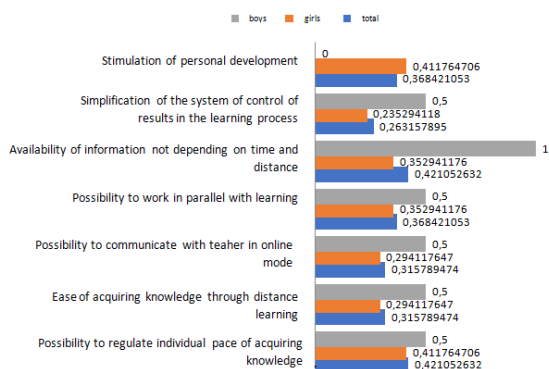


Figure 5 – The most relevant criteria for distance learning

According to the study, the most popular Internet communication channel used by students to communicate is Telegram. At the same time, respondents use all the proposed channels and did not specify others. The least popular are Skype, Facebook Messenger and WhatsApp, and such channels as Instagram and Telegram are used by students of NTU KhPI every day and sometimes around the clock (Figure 6, 7). For both boys and girls, the most popular Internet communication channels are Telegram and Instagram.

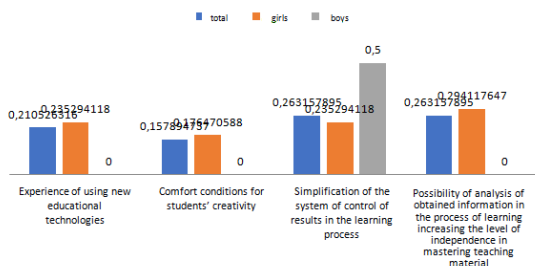


Figure 6 – The least relevant criteria for distance learning

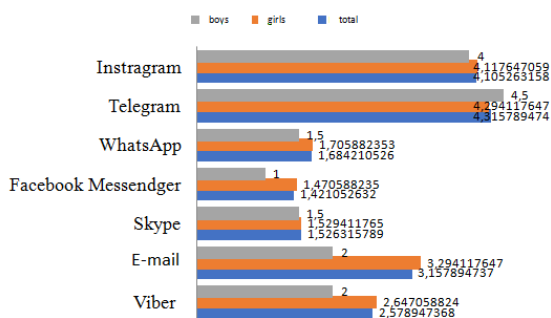


Figure 7 – Use of Internet communication channels by NTU KhPI students

Thus, students of economic direction of study use WhatsApp every day and almost never Skype, while humanities students use WhatsApp and Facebook Messenger equally; and students of computer specialties often use all the proposed mobile messengers (Figure 8).

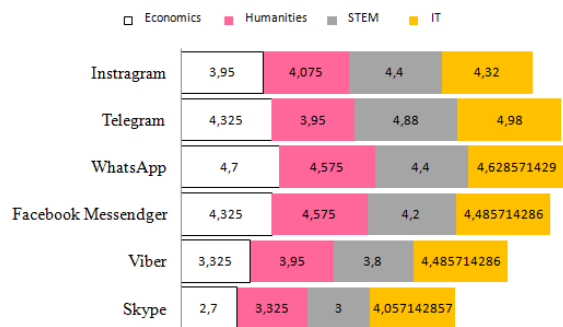


Figure 8 – Use of Internet communication channels by NTU KhPI students, by the areas of training

Very often both boys and girls communicate 1-2 times a week on training issues (looking for material for reports, reports, essays, etc.), as well as communicate both on training and out of personal interest. Video calls are also seldom made, with girls more often making them than boys and very rarely playing via the Internet (Figure 9).

According to the results of the research, the respondents carry out all the proposed actions through Internet communication channels, and most often communicate with close friends and relatives, as well as receive advertising messages. At the same time, girls exchange educational materials with their classmates almost every day, and boys communicate in interest groups. It is clear that from time to time respondents write greetings on holidays (Figure 10). Table 2 shows NTU KhPI students' usage of channels of Internet communication by courses and forms of training.

Table 2: NTU KhPI students' usage of channels of Internet communication by courses and forms of training where 1 - no, never; 2 - very rarely; 3 - 1-2 times a week; 4 - every day; 5 - round the clock

	1-2 years	3-4 years	5-6 years	Contract	Budget
Skype	3,42	3,31	2,60	3,63	3,12
Viber	3,98	3,94	3,40	4,49	3,70
Facebook Messenger	4,64	4,25	4,40	4,49	4,35
WhatsApp	4,42	4,62	4,60	4,20	4,66
Telegram	4,42	4,67	4,80	4,77	4,58
Instagram	4,53	4,36	4,20	4,91	4,24

At the same time, self-employed students, for whom the purchase of most durable goods is not difficult, often distribute their own photos and videos through Internet communication channels, and very rarely write holiday greetings and observe the posts of others. Those students who have enough money only for daily expenses, every day carry out almost all the proposed actions through Internet communication channels (Figure 11).

Among the advantages of Internet communication channels, students include round-the-clock access and storage of the archive of communication. It is also important for girls to save time provided by Internet communication channels; and for boys – the opportunity to write but not speak (Figure 12). Students are least interested in the fact that with the help of Internet communication channels it is possible to emotionally color the message with the help of postcards. Convenience is important for each of the three categories of students.

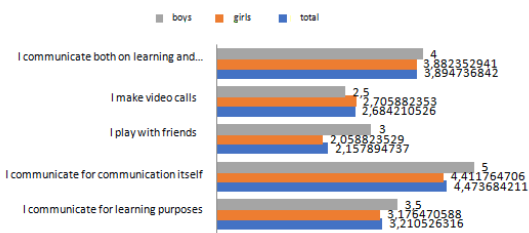


Figure 9 – The nature of students' communication through Internet communication channels by gender, where 1 - no, never; 2 - very rarely; 3 - 1-2 times a week; 4 - every day; 5 - round the clock



Figure 10 – Practices of students carried out by them during the use of Internet communication channels, where 1 – no, never; 2 – very rarely; 3 – 1-2 times a week; 4 – every day; 5 – round the clock

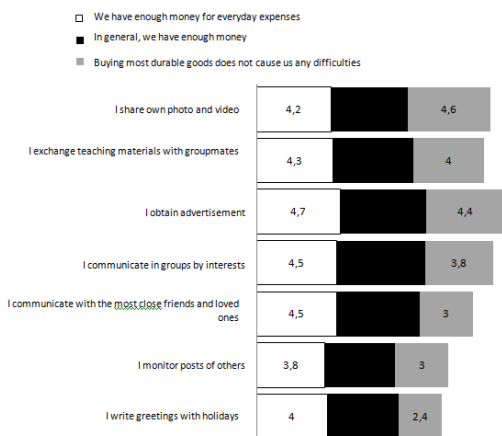


Figure 11 – Practices of students carried out by them while using Internet communication channels, with regard to financial position

According to their financial situation, respondents prefer the following factors. Students who belong to the lower strata communicate through Internet communication channels, because they provide the opportunity to communicate with the right people and the opportunity to emotionally color the message with the help of emoji. Middle-class students appreciate the 24-hour access mode, time savings and storage of the communication archive in Internet communication channels, while students of the upper class appreciate the opportunity to write and not speak (Figure 13).

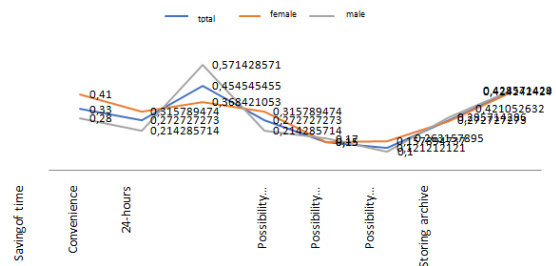


Figure 12 – Advantages of Internet communication channels in students' assessments



Figure 13 – Advantages of Internet communication channels in students' assessments, by financial situation of respondents

Separately, when answering open-ended questions, students indicate that Internet communication channels have supporters because they provide freedom of action, time, convenience, variety of content, information, and so on. The attractiveness of an Internet communication channel is not only the ability to attach files, it is not only the popularity of the channel and friends. This is the convenience of design, the use of cloud storage, the ability to be in two chats at once, sort letters/messages, record different types of messages, maximize the personalization of the platform and the ability to connect to any device.

When choosing Internet communication channels, students trust such sources of information as the popularity and ratings of magazines and websites (Figure 14). At the same time, students, regardless of gender, least trust the feedback of users and the advice of friends and acquaintances. Own experience occupies an average position in student assessments. No differences were found on other grounds.

According to the study, almost 30% of students have several favorite Internet communication channels, no student who does not have a favorite channel. This applies to both boys and girls (Figure 15). At the same time, the largest percentage, namely 41%, students of technical specialties have several favorite channels of Internet communication, and students of computer specialties do not have any (Figure 16).

Almost all students are attracted to the particular channel of Internet communication by the possibility to attach files, connect to most of friends, and because it is the most popular channel (Figure 17).

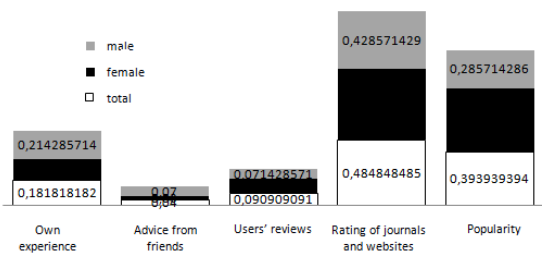


Figure 14 – Sources of information that students trust when choosing an Internet communication channel

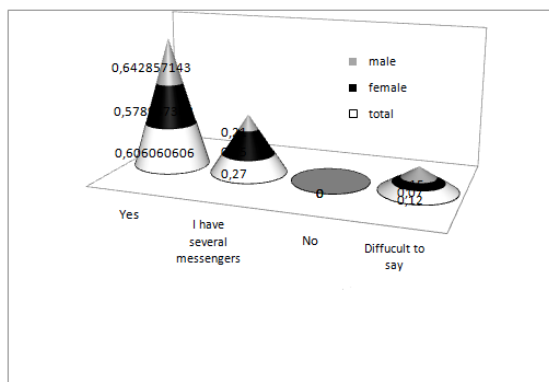


Figure 15 – Students' preferences for using Internet communication channels

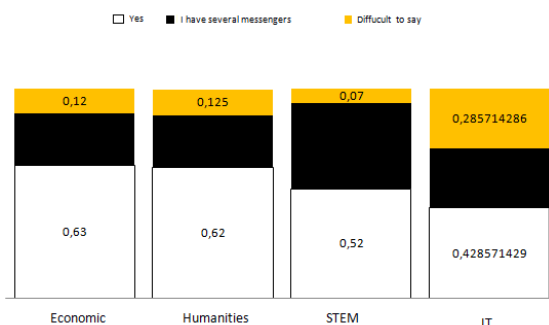


Figure 16 – Students' preferences regarding the use of Internet communication channels, in the field of study

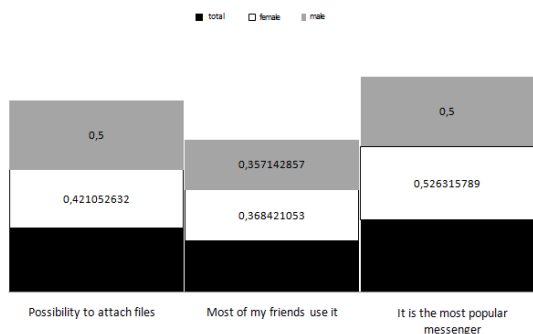


Figure 17 – Factors-preferences of students regarding the use of Internet communication channels

Today, when researching the Internet on educational issues, it is increasingly called the educational and communicative environment. The relevance of the topic of Internet research in this perspective is that the results of social progress, previously concentrated in the field of technology, are now concentrated in the information sphere. The stage of development of the Internet

at this time can be characterized as educational and communication.

The Internet as a platform for distance learning provides an opportunity to create a system of mass lifelong learning and personal self-learning, general exchange of information, regardless of temporal and spatial and other frameworks.

In addition, the Internet as an educational and communicative environment gives equal opportunities to all people regardless of social status (schoolchildren, students, civilians and military, unemployed, etc.) in any part of the country and abroad to exercise human rights to education and information.

Like any form of learning, distance learning has a certain component composition: the goals of the social order for all forms of learning; content, methods, organizational forms, teaching aids.

The standard set of services, which is a priori each channel of Internet communication has, is text, audio, and video communications, the ability to create a group chat, and transfer files and geolocation.

To determine the features of the use of Internet channels to master the educational and communicative environment of communication, according to students, a questionnaire was conducted in which 1240 students of NTU KhPI took part. Spontaneous sampling was used in the study. Among the respondents, there were 58% – women and 42% – men.

The study showed the following:

- All respondents, without exception, noted that they use Internet services. In particular, all respondents use the services of Internet channels as an educational and communication environment.
- According to the results of the survey, respondents indicated that the most convenient Internet communication channels for receiving educational materials are e-mail, the ability to download electronic initial materials and chat messengers. To communicate with the teacher via the Internet, students most often use Internet conferences and chats in messengers. Meanwhile, such a channel as chat in mobile messengers is relevant for students to control learning outcomes. For the purpose of self-education, students use primarily webinars, various electronic learning materials and electronic libraries. Students also participate in the development of educational projects and for this purpose use primarily Internet conferences. Such a channel of Internet communication as forums in the educational environment does not play any role.
- In general, despite the fact that distance learning was organized at the NTU KhPI during the quarantine, only a part of the respondents note that they are involved in this form of education.
- Students report that teachers most often use online tests, e-textbooks, computer presentations and video conferencing, less interactive whiteboards, cloud technologies, and very rarely video lectures and one-on-one counseling. An Internet platform such as Zoom is gaining popularity.
- According to respondents, they are attracted to distance learning by the ability to regulate the individual pace of knowledge and access to information. It is also important for boys that distance learning makes it possible to work in parallel with learning and simplify the system of monitoring results in the learning process.
- Meanwhile, students note that distance learning does not create comfortable conditions for student creativity.
- According to the study, the most popular Internet communication channel used by students to communicate is Telegram.
- According to the results of the survey, respondents most often communicate with close friends and relatives, as well as receive advertising messages. At the same time, girls exchange educational materials with their classmates almost every day, and boys communicate in interest



groups. It is revealed that from time to time respondents write greetings on holidays.

- Among the advantages of Internet communication channels, students note round-the-clock access and storage of the archive of communication. Separately, students note the importance of such factors as ease of design, use of cloud storage, the ability to be in two chats at once, sort letters/messages, record different types of messages, personalize the platform and the ability to connect to any device.
- When choosing an Internet communication channel, students trust such sources of information as popularity. At the same time, students, regardless of gender, least trust the feedback of users and the advice of friends and acquaintances.

Ukraine's integration into the European educational space and the globalization of the international labor market, on the one hand, and the global crises that swept the world in 2020, on the other hand, highlighted the problem of more effective use of the Internet as an educational and communication environment for student youth. Namely the Internet allows a young person to carry out own educational trajectory under the influence of an educational institution, combining distance learning with self-education and communication. It is the Internet as an educational and communication environment that allows forming qualified, competent, competitive professionals who are able to quickly perceive and process large amounts of information presented in both paper and electronic form, know and is able to use different methods of working with information sources, constantly update their knowledge, expand the range of necessary skills and increase the level of their competence.

## 5 Conclusion

In general, the Internet actively influences the educational process. Virtual reality occupies an important place in education and becomes a relevant learning environment in the learning, development and socialization of student youth. With the help of the Internet, one can transfer knowledge and gain world educational experience, as well as develop the educational and communication environment of students.

The educational and communication environment of student youth is a set of knowledge, technological and mental entities, which in synchronous integration provide high-quality mastery of the system of relevant knowledge and communication skills. Students represent one of the most problematic social groups, which is undergoing dynamic internal changes, accompanied by the complication of relationships and relations in the social structure of Ukrainian society.

In recent years, electronic forms of learning have rapidly become widespread in the educational environment of all levels of education. Network communication and cloud computing technologies have greatly influenced the spread of services and changes in the methodology of the educational process. The information content and capabilities of the services determine the quality of the virtual environment of the higher education institution.

Recommendations for heads of higher education institutions on the effective use of Internet communication channels include:

- To spread the practice of using Internet channels as an educational and communicative environment aimed at student youth;
- Teachers should use various channels of Internet communication as methodological and educational platforms on a larger scale.
- For owners of existing public accounts, it is expedient to develop a series of their own emojis, stickers and flyers to help promote these organizations;
- Universities should increase the level of security when using Internet communication channels.

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