NETWORK COMMUNICATION AS A MEANS OF IMPROVING THE EFFICIENCY OF TEACHER-STUDENT INTERACTION

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Abstract*: The article investigates the scope of use of network communication in higher education of Ukraine. The paper establishes the existing and potential possibilities of network communication tools in increasing the efficiency of interaction between teachers and students. The most common types of network communication used by teachers are determined. The authors highlight the advantages and disadvantages of e-mail, social services, network discussions as means of communication with students. Presented are the goals of the teachers concerning the use of network communication in the educational process, the importance of which is provided for individual student counselling, assessment and commenting on the tasks performed as well as discussion of educational problems. Particular attention is paid to the changing role of scientific and pedagogical staff in the organization of students' educational activities. The research helped establish modes of electronic counselling and discuss the potential of network communication as to controlling and diagnosing students' progress. The best variant of network communication is determined, according to which students take initiative and coordinate with the teacher the means of network communication. There are a number of problems that hinder the development of network communication, the main of which is the passivity of students and the resistance of teachers. The ways of increasing the efficiency of teacher-student interaction via network communication.*

INTRODUCTION

The topicality of this research is determined by the fact that in the modern world one of the indicators of success of higher education institutions and teachers is the level of implementation and use of ICTs in education. ICTs are already not only one of a myriad of additional tools for increasing the motivation of students to study, but are becoming an integral part of a holistic educational process, which greatly increases its effectiveness. Most teachers understand that modern information technology is a means of teaching that improves the teaching process, improves its quality and effectiveness, promotes the development of learners' creative abilities, simplifies and automates the processes of control, testing and diagnostics. The special significance of ICT in the educational process lies in the fact that they allow organizing an efficient system of teacher-student communication to exchange educational and methodological literature, solve current organizational issues, pass control tests and check them efficiently in an on-line mode, etc.

1.   NETWORK COMMUNICATION AND LEARNING

1.1 Previous research

Network communications are particularly popular due to widespread use of open and distance learning in modern educational space. Interactive network communications provide additional possibilities for simulation of the educational and informational environment where we do not observe teachers transfer information to the audience while students passively perceive, but we see a new way of communicative (individual or group) interaction "teacher-student", "student-student", "teacher-teacher". Through network communication with the teacher, students are involved in the modern educational space of electronic culture and teachers gain new opportunities for the implementation of personality-oriented learning, the formation of cognitive and communicative competences of students: the ability to understand the interlocutor and get involved in a dialogue, participate in the discussion, argue each other' position, etc.

The scientific community has been widely discussing the issue of ICT use in education in the last decade. G.Siemens quite sensibly states that former educational theories, mainly behaviorism, cognitivism, and constructivism were overshadowed by a new one – the connectivist theory, due to profound changes brought in by new technologies (Siemens).

The principles of connectivism are well known:

- learning and knowledge rests in diversity of opinions;

- learning is a process of connecting specialized nodes or information sources;

- learning may reside in non-human appliances;

- capacity to know more is more critical than what is currently known;

- nurturing and maintaining connections is needed to facilitate continual learning;

- ability to see connections between fields, ideas, and concepts is a core skill;

- currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities;

- decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Connectivism is the thesis that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to contrast and traverse those networks. …there is no real concept of transferring knowledge, making knowledge or building knowledge. Rather, the activities we undertake when we conduct practices in order to learn are like growing and developing ourselves and our society in certain (connected) ways (Downes 2012).

With the changes in the way knowledge is received many scientists discuss problems of improving the quality of higher education through the use of information and communication technologies in the educational process, in particular: N.Apatova, V. Bevz, V. Bykov, I. Bulakh, A. Verlan, V. Gabrusev, O. Goncharova, Yu. Goroshko, A. Gurzhiy, V. Demyanenko, M. Zhaldak, I. Ivaskiv, V. Klochko, P. Malanyuk, Y. Mashbits, N. Morze, S. Rakov, Yu. Ramsky, I. Robert, V. Rudenko, Z. Seidametova, S. Semerikov, Yu. Trius, T. Cheprasov and others.

Various aspects of establishing an effective communicative interaction between participants in the traditional educational process and distance learning are the subject of research by scholars: V. Bondarenko, N. Volkova, E. Vernich, I. Voznia, L. Gorodenko, V. Hrytsenko, S. Druzhilov, V. Kolos, S. Kudryavtseva, B. Kuzikova, A. Kupenko, V. Kukharenko, T. Lavryk, V. Lyubchak, N. Moulina, E. Polat, M. Rudenko, T. Sviridenko, V. Soldatkin, G. Yatsenko.

V. Shcherbyna, L. Filippova, O. Oliynyk, O. Ryazantseva, P. Gurevich, M. Kademiya took special interest in the study of network communications between the subjects of educational process (Shcherbyna 2014).

Key types of communication for the distance education system are thoroughly analysed by L. Filipova and O. Oliynyk, who note that interaction as one of the leading functions of distance learning is represented by dialog form of communication between students and the teacher. It is the interaction that distinguishes teaching from simple dissemination of information, because in such a process teachers use their skills to help each individual student to turn information into personal knowledge. Scientists emphasize that interaction is important and necessary for any educational model; simultaneously they are recognized as key for distance education models, which they are represented through content and modes of learning in the form of indirect and direct models. Modern Internet network tools create a new educational and communicative environment for distant education models, in which the content remains unchanged, while communication forms of education are new (Filipova, Oliinyk 2013).

O. Ryazantseva carried out comprehensive research into the teacher's skills necessary for a successful communicative interaction with learners. The researcher states that any educational. process build up on top of communication, since the education of the individual is carried out only in a communicative environment. The instructor should be aware that the main responsibility for the success process. In particular, V. Shcherbyna, leaning on the results of a special sociological study on the use of computer technologies in education, suggested that teachers attach more value to live discussion as an educational tool than students. It is important for our work to conclude that there is a distinct line dividing teachers who use ICTs massively and those ones who are indifferent (of communication lies with him as a specialist who can and must find a way out of any communicative situation. The information society dictates the new role of teachers and requires dynamic adaptation to the specifics of the system, which is due to the indirect interaction of participants of the learning process (Riazantseva 2016).

The processes of the introduction of interactive learning technologies, based on the use of ICT technologies and networks, as well as barriers along the way were explored by Gurevich and M. Kademiya. These technologies included e-mail, forum, chat, videoconferencing, project technology, web quest, blog, blog quest, analysed their influence on the nature of students' educational and cognitive activity and their inclusion in the process of cognition. The authors proved that the systematic application of these technologies in the educational process greatly improves the quality of professional training of future specialists in higher educational institutions (Hurevych, Kademiia 2014).

Noskova and Pavlova stress the need for profound changes in teachers' work, as to the following basic concepts e-enhanced educational interaction: social information (development of the electronic resources of the educational environment), communication (in the "activity key" solutions various classes of educational tasks), management of educational activities (multidimensional feedbacks based on telecommunications). New educational efficiency can be achieved with purposeful systemic changes in these fields of networked educational environment.

1.3 Research objective

However, despite the relatively close interest of academic community in the role of ICTs in modern education, scholars tend to focus on the advantages and disadvantages of using ICT in the student's learning process. At the same time, there still remains a lot to be discussed as to the possibilities of using network communication as a means to improve the teacher-student interaction and we can state the fact of insufficient attention of modern researchers to this topic. All this suggests that the study of existing and potential opportunities of network communication in the environment of higher education potentially reveals new perspectives in raising the quality of higher education and integrating Ukraine into the world of scientific and educational space.

1.2 Specifics of network communication

Before we dwell on the peculiarities of network communication, it should be noted that vocational and pedagogical communication is implemented as a system of various direct and indirect connections between learners and teachers. The leading subject of vocational and pedagogical communication is the teacher, whose professional and communicative activity should be aimed at fulfilling the social order - the formation of harmoniously developed personality. Communication (or interaction) in pedagogical processes covers three interrelated aspects: communicative (information exchange between people); interactive (organization of interaction between people); perceptive (involves the process of perceiving each other as communication partners and achieving mutual understanding).

Types of pedagogical communication are:

- verbal communication - the process of exchange of information through the language (oral, written, internal), which takes place under its internal rules, requires active mental activity and is based on a certain system of established norms;

- non-verbal communication - the process of information exchange by means of non-native communications for the transmission of messages;

- computer communication - the process of information exchange between subjects through verbal and nonverbal communicative systems, mediated by computer means of communication (e-mail, teleconferencing, web conferencing, chat, forum). It is computer or network communication that is a typical example of mediated professional and pedagogical communication, which involves communication between a teacher and students (the system "man - computer - man") with the help of special technical means (CDs, computer networks, audio-visual form, videoconferences, etc.) (Volkova 2006).

Implementation and active use of network communications is one of the main principles of constructing a virtual educational environment, which has recently become more widespread. Among other things, the main features of this environment include:

- support of collective and individual trajectories of training;

- encouragement of students' project activity;

- classes in interactive and distance learning modes;

- maintenance of various forms of network interaction;

- provision of tools for electronic educational resources.

The toolkit of computer communications is a global Internet and Internet broadcasting network, e-mail, electronic conferencing, videoconferences, etc. These tools help educators and students share information, interact in solving common problems, publish their ideas and comments, participate in solving problems and discuss them, create collaborative projects, and just chat with friends and colleagues.

These new opportunities also create new patterns of communication (or interaction) and their perspectives. Teachers can manage the curriculum by creating or using different "social and intellectual spaces" on the network. For example, L. Harasim of the Simon Fraser University in Canada began to apply online training in 1985. To this end, she developed a communication online structure using the following types of "spaces": a relief zone; Library area; Virtual student cafe; Workshop area; Discussion area; Conference area This combination of training zones encourages students to study and helps create a virtual society that unites teachers and students for a certain period of study. Often, such contacts are not reminiscent of conferences because they extend over a longer period of communication and have a more complex structure.

In addition, these new technologies enable teachers, students and university staff to make business contacts in online mode (university admission, tuition, registration), as well as many other student life issues. Often communication tools act as an e-learning agent, linking learning groups and creative teams to each other. The speed and quality of network communications often correspond to the quality of educational tasks performed. According to experts, soon all the questions of student life and study will be presented on the Internet as a separate zone of "social spaces". American teachers are convinced that they are already "infonauts" (employees of the information age) (Filipova, Oliinyk 2013).

There are currently four types of computer-aided communication on the Internet:

- the first kind is an asynchronous communication between two communicators in the e-mail mode (e-mail). It characterizes the use of electronic communication channels for the transmission of information between users remote to each other who at the moment may not be present on the Internet;

- the second is a connection between many users of electronic subscriptions through special programs – litservers, usenet, electronic bulletin boards. In this case, the user orders the service or subscribes to the program which sends him a message from a certain group, most often - on a specific topic;

- the relations of the third type are built in the search mode of the site in order to obtain asynchronous information, which serves as the basis of people's relations. The sites can be used in the format of FTR (file transfer protocol - rules for transferring files to the Web), in the form of websites, Gopher (system for searching information on the Internet);

- synchronous communication is the fourth kind of Internet communications. It is one-on-one communication, communication with multiple or many users. An example is the programs of network computer games, chats, social networks (Sharkov 2012).

1.3 Sociological survey on student ICT use for learning

To analyse the current state of network teacher-student communication we will use the results of a sociological survey conducted in 2015 at the Dniprovsk State Technical University. It was intended to reveal the scope of use of ICTs in various areas of teaching activity. This study was carried out within the framework of the international project "International Research Network for studying and developing new tools and methods for advanced pedagogical science in the field of ICT tools, e-learning and intercultural competences". The project is funded by the European Commission under the 7th Framework Program within the Marie Curie Actions International Research Staff Exchange Scheme. According to its characteristics, DDTU is the average university of Ukraine, which suggests the possibility of applying the results of research to a wide range of technical universities in Ukraine.

The sociological survey was conducted using a specially designed toolkit, by which the teachers and heads of the structural units of the DSTU were interviewed through an electronic questionnaire. The survey was attended by 53 university staff members, of which 89% are scientific and pedagogical staff (59% associate professors, 26% teachers, 4% professors) and 11% - the heads of structural units. The empirical basis of the study makes it possible to draw some conclusions about the peculiarities of the use of ICT in teaching.

In particular, it was found that the most common type of network communication, which almost 44% of professors use in their professional activities is the exchange of messages (Figure 1). Presently e-mail really became an integral part of teacher-student interaction, because with its help they can freely transfer organizational and educational information, send educational materials and tasks, as well as review them and consult. E-mail, thus, allows learning to be targeted and individualized. The main advantage of this means of communication lies in its simplicity and reliability. The delivery of any message and educational materials by e-mail is practically instantaneous, thus providing regular timely communication between the subjects of educational process. E-mail is an effective technology that can also be used in day-to-day training for the delivery of educational literature and counselling. In contrast to mobile communication, where there isn't always access to the subscriber and where student can forget the received oral message, the e-mail

message is stored indefinitely and serves as a permanent reminder of the required action or response to the information received (Barvinok).
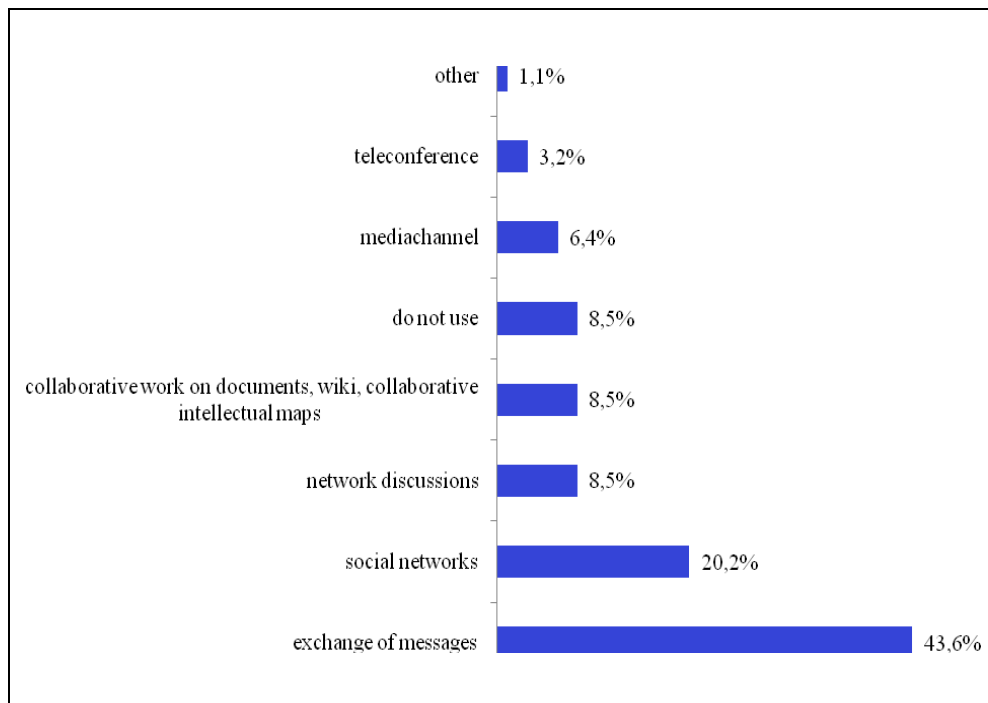

Figure 1. Kinds of network communication, used by the professors in teaching courses

Source: Own Work

Along with traditional e-mail, network-based means of interaction between teachers and students can also be used for various social services on the Internet (social networks, blogs, forums), which, unlike the mail, are more open, here we mean the absence of any restrictions or prohibitions. According to the results of our study, every fifth teacher uses social networks as a means of Internet communication with students. 8.5% of teachers create network discussions and use collective work on documents, wiki, collective, intellectual maps. The least common types of network communication were media channels (6.4%) and teleconferencing (3.2%).

From the results of research on the use of social services in education in the United States it was concluded that first-year students who study using ICTs and especially social networks are more successful in learning than full-time students (Barnes). Currently, many university accounts are registered in different countries, where academic staff and students, independently or collaboratively, create educational content, which in turn stimulates independent cognitive activity in others. In Ukraine the practice of using social networks for educational purposes is rapidly gaining in popularity. Their advantages in this context include the

possibility of informal communication between the teacher and the student, since in a social network the teacher becomes an assistant, a friend and a mentor. Social networks ensure the continuity of student-teacher interaction. In a class learners and professors meet once or twice a week, while via social networks this can happen at least daily. The educational process does not necessarily stop because of student's or teacher's illness. It is possible to carry out the learning process in on-line mode. Continuous interaction of students and teachers in the network (at the time convenient for them) ensures continuity of the educational process.

The advantages of social networks as to improving the efficiency of teacher-student interaction lie in the fact that they represent a familiar environment for the students where they spend most of their time. They have a simple user interface; they incorporate many additional services that can be used to create their own educational content. All this allows you to save time bypassing the stage of adaptation of students to the new communicative space. This, in turn, contributes to improving students' interest in a particular subject. For a modern generation Z it is more interesting to search and learn educational material not in printed form, but through the Internet. It becomes possible to create educational content in collaboration (learner and teacher). Instead of simply consuming information, learners create messages, discussions and other resources. All this contributes to the enhancement of the communicative relationship between students, strengthens the student community, which learns to organize their own work outside the classroom. Social networks have the advantage from an economic point of view, because this service is free, which does not require expensive software for data storage (Kuchakovska 2014).

The use of social networks as a communication platform allows to organize independent work of students in extra-curricular time. After all, methodically correct and purposeful involvement of online services in the educational process potentially promotes self-regulated self-study, since learning through electronic social networks is an active, dynamic process, initiated and managed by the students themselves. In addition, the use of network technology services as a modern educational tool improves the quality of educational process, promotes formation of media literacy in learners, which allows to quickly respond to the new requirements of the information society (Shulska 2017).

By using social networks as a means of learning, students acquire skills that are incited by the challenges of the 21st century, namely, mastering the means and modes of communication with other people, the ability to correctly and creatively use data to solve problems. The social network allows the teacher to understand their interests' personality deeper through their interests, activities and communities. This empowers the teachers to offer students the kind of information, topics or tasks that should interest them.

Openness of network communication can have both positive and negative impact on the interaction process. It is believed that social networks distract from the

initial process and cannot become an additional pedagogical tool, since it is traditionally a virtual environment to spend free time. The main problems associated with the introduction of social networks in the educational process are permanent connection to the network, compliance with the etiquette of communication among participants, failure to constantly monitor the use of social networks for educational purposes, etc. In addition, the teacher will not always be able to check the credibility of the educational materials that students download (Kuchakovska 2015).

Besides, a somewhat common problem of all network communications is the lack of space-time limits in this process – a message can be sent at any time interval (on business days and on weekends, during the day and at night, after a specified period). In these circumstances, it is important for teachers to monitor and track the time when messages arrive, while for the students to limit their communication with professor by working hours. All this requires from all participants the skills of self-organization and self-management. Teachers are advised to develop a personalized timetable to deal with incoming messages (Strekalova 2016).

1.4 Instruments for networked communication

Currently, there is an increasing interest of professors in blogs where we can find short notes to quickly upload educational information and research results. A blog (weblog) is defined as a personal network journal, which regularly adds notes containing text, images and multimedia. It is designed to express the views of the blog's author and hold a discussion of the author with its readers. The blog may be open for feedback and questions or it can also be closed. In the context of education blogs can be used, on one hand, as teacher notebooks that empower students to discuss news related to learning, publish materials that contain additional information beyond the scope of the training course, present their opinion on the development of technology and science related to the training course, and on the other hand, a blog can be a students' notebook where they can describe the learning process, share experiences and impressions with their friends or groupmates. This type of communication provides the opportunity for the participants to express their thoughts on different topics, which undoubtedly contributes to the learning and development of students, as well as the development and improvement of teachers.

A forum is one of the most accessible and yet effective means of remote communication, which is a means of network communication via text messages between students and teachers in the mode "everyone to all" or "all with all" in real or delayed time. Traditionally, the forum is implemented as a component of the informational and educational environment and it is its separate service; you can also consider the forum as an electronic educational resource that serves to provide communication activities within the course curriculum and is an integral part of the e-learning syllabus. In general, the Web forum provides structuring of information, which greatly facilitates students' search and access to information, lets draw a

dividing line between studying discussions from other kinds; it allows to store information and discussions for a long time, enabling new students to familiarize themselves with the experience of the past; forum frees the teacher from answering questions that he answered in the previous training cycle; it gives the participants a sense of equality in the educational process - both the teacher and the student can initiate a discussion to discuss issues of interest to them (Holoshchuk, Dumanskyi, Sierov 2008).

Research has shown that even a small period of study in group mode greatly enhances the efficiency of distance learning. The development and increasing access to telecommunication facilities promotes the dissemination of such methods of distance education that involve working in groups. To date, little has been done to systematize the possibilities of interpersonal interaction of students in the remote mode of work. Learning in groups is especially beneficial - it reduces the isolation of students inherent in distance education and open ways to help students with instructions and tasks. Learning in groups is a way to overcome the isolation of a distance student (Riazantseva 2016).

As a medium to work with texts one can use wiki-sites. Wiki is a system that provides linking text pages with each other and the ability to organize users to create new ones or to edit existing pages of other people. The benefits of wiki-sites (for example, wikipedia) consist in a large number of unadapted texts on various topics, the ability to jointly edit almost any page, with the exception of the main and official pages, the simplicity of registration and the creation of personal pages in the wiki system, the creation of a system of "internal" links, the ability to view the history of changes and return to previous versions of the page. However, the disadvantage is that several users cannot edit a single page at a time. But this disadvantage can be turned by a teacher into an additional pedagogical tool for developing student competences, such as the ability to negotiate, to develop a unified strategy of action, the ability to work according to guidelines. The opportunity to discuss articles allows to organize work aimed at developing the skills of critical thinking, while the structuring of similar articles on topics, the launching of general categories of articles on wiki-site extends the field of teacher's help – aiding students to deeply understand the essence of the concepts considered, to find the core ideas, analogies, to generalize, draw conceptual connections.

With the use of e-mail and social services as a means of communicating with students, it should be noted that the instructor must have excellent skills of professional written communication. By entering into a dialogue with a person via email in asynchronous or synchronous mode, participating in various thematic teleconferences, the teachers, through their written communication, demonstrate their own level of knowledge, culture, reveal their spiritual world. Thus, the efficiency of communication, its educational, upbringing and development potential depends on teachers' vocabulary scope, literary skills, the ability to

choose appropriate functional styles, proper language and speech means in accordance with the requirements of the statement (Riazantseva 2016).

According to K. Gilyarova, within electronic teacher-student communication the style of their messages is almost the same. Both teachers and students can be adherents of the literary language, as well as they both can opt for colloquial register and network jargon. The language of the letters is more likely to correlate more with the age of the one who writes and the skills of Internet use rather than with their professional status. Young teachers keep their youthful style while e-mails of middle-aged and elderly teachers are close in their characteristics to paper letters. The most annoying excuses in the letters of the students are the absence of uppercase letters, paragraphs and punctuation, the lack of proper address, greeting and signature (which at some points leads to anonymity), the absence of an accompanying letter when sending files or confirmation at receiving, abundance of spelling mistakes and typos, too many Emoticons (smileys). At the same time, the use of spoken language and even slang vocabulary does not incite complaints. Many teachers complained about familiarity and ignorance (Hyliarova 2011).

According to a study held by the European Commission to identify new ways of obtaining education and training in Europe in 2020-2030, the experts forecast the following trends:

• open learning through the Internet will become a traditional form of education;

• mobile Internet devices will become the main tools for learning;

• paper books will be replaced by electronic multimedia content;

• multi-user virtual worlds will make physical visits to schools and universities unnecessary;

• open educational resources will be widely used by all subjects of the educational process;

• the community will not rely on experts as to the quality of knowledge and training programs, but will move towards quality knowledge, verified through Internet resources;

• systems and services will be developed to provide group mutual learning among interested teachers and students;

• blogs and other multimedia materials posted on the Internet will be recognized as "legitimate" publications for scientists;

• virtual mobility will break the barriers between national education systems;

• personal learning environments will replace existing virtual learning environments, etc. (Osvita u Yevropi).

In this context, it should be noted that the high rates of use of messaging services and social networks in the modern Ukrainian educational space are reflecting the

goals of teachers regarding the use of network communication in the educational process. In particular, based on the analysis of the results of the aforementioned sociological survey, it has been established that for now more than a third of teachers of DSTU (35.3%) use network communication tools for individual student counselling (Fig. 2). At the same time, 30.3% of the interviewed staff of DSTU noted that they use network communication to check and comment on the tasks performed. Indeed, e-mail and social networks are the most convenient ICTs to achieve these goals. Discussion of educational issues, online discussions (we can assume that it is via Skype, forums, blogs, media channels), unfortunately, are not yet widely spread, since only 12.6% of teachers are pursuing this goal. At the same time, 7.6% professors use Internet technologies to attract students for peer-to-peer evaluation and 5.9% do so to create a network community of educational or scientific nature.
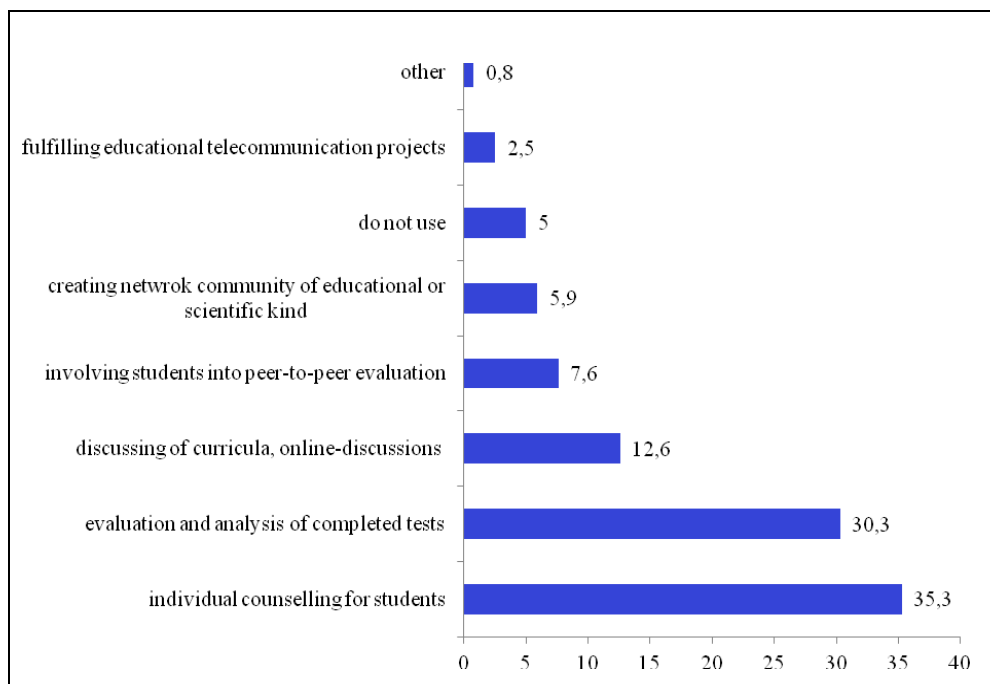

Figure 2. Goals of network communication in teachers' communication

Source: Own Work

Today, the role of the teaching staff in organizing the student's educational activities requires to be reconsidered. Instead of broadcasting educational information during lectures and consolidating the theoretical knowledge on practical classes, the teacher's primary task is to organize methodical support for the student's independent work on the course and to evaluate the results of this activity. In essence, there is a shift in the role of a teacher from a person who gives knowledge in the finished form to a consultant who directs the development of the students' personality in the proper way for them to obtain effective educational and

professional results. The teacher is to solve the tasks of professional and personal development of students in a new working mode of a consultant. Owing to the possibility of electronic counselling, students not only gain deeper knowledge of the course, but they also become more motivated to study and more focused to study this exact course, students develop computer-mediated communicative skills and skills of independent learning within the taught course. E-Counselling helps to develop initiative, creative approach to solving communication tasks via e-mail - students themselves initiate counselling, offer possible solutions to educational problems and tasks, as well as to tasks that arise in the process of mediated communication (Blahovysnaia, 2010).

N. Morze, considering the ways of using ICTs for learning, notes that the teacher ceases to be the sole source of information for the student. At the same time, the emphasis shifts from the formation of reproductive skills such as memorization and reproduction, to the development of analytical skills based on comparison, synthesis, analysis, evaluation of identified relations, planning of ICT-aided group interaction (Morze, 2011).

At the same time, triggered by the shortage of class hours, the problem of objective student assessment gets even worse and the diagnostic function of the teacher gains paramount importance in organizing the students' educational activities. Due to the use of information technologies, the diagnostic function of control and evaluation of knowledge becomes more complete and more comprehensive as to the information diagnosed (for example, a review of activity on the website, calculating the total average score for each student and academic group, etc.). Due to its technical capabilities, ICTs help to systematize, rank and correlate evaluation information (for example, the choice of the assessment scale). With the help of network communication it is possible to organize multiple assessment of learning - operational control in tests, remote assessment for distance learning, when the student responds by e-mail. With the help of email, any student action is boosted, his mood is supported through encouraging, friendly comments and instructions for further actions. The interactive dialogue activates educational, cognitive and speech-thinking activity as a result of multimodal presentation of information.

It should be noted that the practice of using network communication in Ukrainian universities is gaining in popularity, but the scope of its use depends mainly on the subjects of learning. Teachers, on one hand, understand the benefits of computer communication and send e-mails or other messages to students with course materials and tests, and on the other hand - teachers of humanities consider it a disadvantage that they cannot always determine the level of students' mastering a certain topic or course without personal communication with them in the classroom. Of course, Skype-communication and video conferencing can help in this matter; however, not all lecturers can access these tools during their working hours. In turn, students who, for good reason, did not attend training sessions, use network communication to get acquainted with the materials that were discussed at classes, fulfil certain control task, such as an essay or abstract. But, given that

teachers cannot control the autonomy of this work, computer communication triggers students' plagiarism in the network.

In general, characterizing the current state of network communication between the teacher and the students, let us note that most of the teachers (37.8%) indicate that the best option for network communication is when students demonstrate initiative and agree with the teachers on the ways of network communication. In contrast, 29.7% of teachers point out that it is best to offer all students the only means of communication, as it lets them stay to objective to learning and evaluating the results of all students without exception. In this case, every fourth teacher prefers giving students the choice of network communication tools - either with a teacher individually or in a joint group with all students who are attending a course.
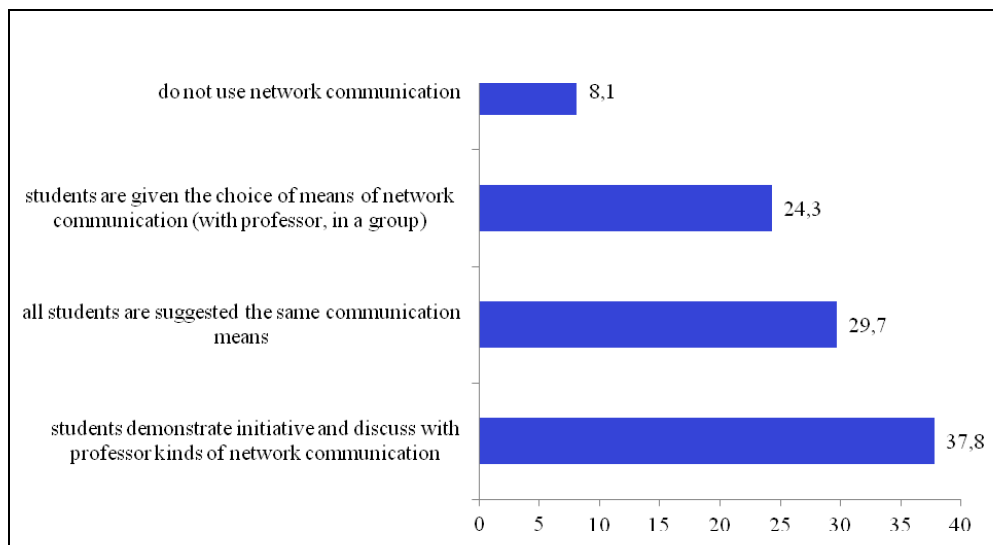
Figure 3. Preferred mode of network communication with students for the learning purposes

Source: Own Work

Currently, one of the most important pedagogical problems is student passivity in communication, lack of skills for constructive dialogue with a teacher, inability to fully demonstrate their abilities and creative initiative. It is highly likely one of the most relevant and at the same time the most difficult pedagogical tasks to form the abilities that allow the student to capture non-obvious associations, to produce non-standard ideas and solve problems. Objectively, such emancipation of thinking may become possible due to the complex properties of the informational educational environment, which allows the student, in collaboration with the teacher, to design an individual educational trajectory, selecting the most suitable training schedule, information resources, and, finally, teaching methods. Subjectively, the most important role here is played by the chance of self-expression for everyone, when the teacher and students do not make hasty conclusions and superficial judgments,

but open the way for initiative. In an asynchronous environment, by emailing the teacher or participating in an e-conference, each student, even shy or reserved, has the opportunity to present his point of view on a problem that runs counter to the generally accepted. The students' personal Web pages serve the same purpose, since they allow the author to demonstrate original thinking in the very conceptual structure of the page, its content and design (Zakharova 2010).

The success of educational and search-and-productive activities is the main factor in the personal growth of an active student, who exhibits reflexivity, initiative, a sense of personal worth and dignity, the ability to self-control, which supports conscious self-regulation. At the same time, new needs for self-change are developing. There is a breakdown in the stereotype of the relationship between the teacher and the student: a teacher shifts away from the rank of mentor or "omnipotent oracle" and becomes the leader, consultant for the collaborative activity, while the student, feeling the support and trust of the elder, shows true interest and initiative in interacting with teacher.

In conclusion, we would like to address the topic of the readiness of teachers and students to use the means of network communication to communicate with each other, which is rapidly gaining special significance. The lack of skills to use modern network computer communications manifests itself in the relative passivity of participants in the learning process, inability to express their own opinion accurately and correctly, inability to use modern means of communication for obtaining consultations and protect the work done in unusual conditions of interaction. In order to improve the efficiency of interaction between teachers and students via network communication, subjects of the educational process should above all be prepared for a very intensive exchange of information through the channels "teacher - teacher", "teacher - student" and "student - student". The teacher, in turn, should have a high level of ICT competence and be an internally well-organized person capable of preparing all the necessary components of the network course in advance, developing a clear calendar of events during the course and all types of reporting on the training tasks. The special role of the teacher in terms of network communication is that he must be able to work with virtual students, who he might not see, sometimes, even during the entire period of study. On the one hand, he should actively stimulate and encourage the joint work of students when performing academic tasks with the help of network technologies, and on the other hand, actively inform students about their current academic performance, test results and control tasks with the help of network technologies.

CONCLUSION

Thus, as a result of studying the possibilities of network communication as a way of improving teacher-student interaction it has been established that the most common types of network communication used by teachers are the exchange of messages and social networks. The benefits of email are their anonymity and the

ease and speed of sending, as well as widespread and affordable means of communication. The main goals of communication for the teacher are individual student counselling, evaluation of knowledge and commentary on the tasks performed. At the same time, teachers' preferred options of network communication with the student is when students take initiative and coordinate with the teachers the ways of network communication in order to provide all students a single communication means. In general, we can say that network communication provides free access to course materials, facilitates the development of communication skills of teachers and students that are implemented in forums, webinars, chat rooms while discussing educational issues. It is the most effective means of interactive and delayed counselling for students in the information society.

The authors see the prospects for further research into issues of ICT use in teaching in the analysis of the potential of social networks as a means of communication between teachers and students.

ACKNOWLEDGMENTS:

REFERENCES

Barnes N. *Social Media Adoption Soars as Higher-Ed Experiments and Reevaluates Its Use of New Communications Tools* / N. Barnes, A. Lescault. [online] at http://sncr.org/sites/default/files/higherEd.pdf (accessed 15 May 2017)

Barvinok, M.V. *Using e-mail in distance education* [online] at http://informatika.udpu.org.ua/?page_id=1753, (accessed 15 May 2017) [In Ukrainian]

Blaovisnaya A.N., 2010: *Foregrounding of ICT resource as an impetus for personal and professional growth of university students* // Developing information technologies in education: the use of new-age study materials in educational process In: Proceedings of All-Russian scientific-practical conference, March 23-25 2010, Tomsk / Ministry of Education and Science of Russian Federation [online] at http://ito.edu.ru/2010/Tomsk/IV/IV-0-4.html. (accessed 15 May 2017) [In Russian]

Downes, S. *E-learning 2.0.* eLearn Magazine, October 17 [online]. Available at <http://www.downes.ca/post/31741>. (accessed 1 December 2015).

Education in Europe in 2020-2030. Forecast [online] at
http://www.pontydysgu.org/2010/01/crowd-sourcing-the-europeanforesight-
study-your=chance-to-be-an-expert/. (accessed 15 May 2017) [In Ukrainian]

Gilyarova K. A., 2011: *Characteristics of Student-Professor E-Mail
Communication*. In: Computer Linguistics and Intellectual Technologies:
Proceed. Of Annual International Conference «Dialog» (Bekasovo, May 25-
29, 2011). Ed. by A. E. Kibrik. Issue 10. Moskva: PH RSYU, 2011, P. 219–
248. [In Russian]

Goloshchuk R. O., Dumanskiy N. O., Serov Yu. O., 2008: *Web-
communities in distance learning*. Scientific Herald of National Forestry
University of Ukraine, 2008, Issue 18.10, P.286—292. [In Ukrainian]

Gurevich R.S., Lademiya M.Yu., 2014: *Modern Interactive Technologies of
Teaching Students*. In: Theory and Practice of Administrating Social Systems,
2014 Vol. 4, P. 99-104. [online] at http://nbuv.gov.ua/UJRN/
Tipuss_2014_4_14. (accessed 15 May 2017) [In Ukrainian]

Kuchakovska G.A., 2014: *Use of Social Networks for Teaching Students.* In:
Scientific Youth - 2014: Proceedings of 2nd Ukrainian Scientific-Practical
Conference of Young Scientists (Dec. 11 2014). Kyiv: Institute of Information
Technologies and Study Means of NAPS of Ukraine, 2014, P. 43–45. [In
Ukrainian]

Kuchakovska G.A., 2015: *The Role of Social Networks in Improving the
Learning Process of Informatics Courses by Future Primary School Teachers*.
In: Information Technologies and Means of Study, 2015, Vol. 47, Issue 3, P.
136-149. [In Ukrainian]

Morze N.V. 2011: *Distance Technology as a Foundation or Modern Information
Technologies in Education.* In: New Educational Technologies : Collection of
Scientific Papers, Vinnitsa: Academy of Pedagogical Sciences of Ukraine;
Vinnitsa Social-Economical Institute of the University «Ukraine», 2011, Issue
30, P.32-42 [In Ukrainian]

Noskova, T.N., Pavlova T.B. *Pedagogical support for student in university
learning network environment* [online]. Available at
<http://portalsga.ru/data/2494.pdf>. Accessed 15 June 2017).

Philipova, L., Oliynik O., 2013: *Conceptual Foundations of Distance Learning
in a Foreign University Educational Space: Communication Aspect*. In: Herals
of Kharkiv State Academy of Culture, 2013, Issue 40, P. 86-96. [In Ukrainian]

Ryazantseva, O.V., 2013: *Specificity of Pedagogical Communication in Distance
Learning.* In: Pedagogy and Psychology, 2013, Issue 43, P. 41-48. [In
Ukrainian]

Ryazantseva, O.V., 2016: *The Skills of the Teacher of Distance Learning System
Necessary for Successful Communication with the Participants of the*

Educational Process. In «Young Scientist», 2016, Vol. 12.1 (40), P. 531–535. [In Ukrainian]

Sharkov, F. I., 2012: *Interactive Electronic Communications (The Emergence of the Fourth Wave)*: Tutorial, 2nd ed-n, M. : Publishing-commercial corporation «Dashkov and C°», 2012, 260 p. [In Russian]

Shcherbina, V.L., 2014: *Socio-Psychological Factors of the Information Environment Development in Higher Educational Institutions of Ukraine*. In: Technologies for the development of intelligence, 2014, Vol. 1, № 6 [online] at http://psytir.org.ua/index.php/technology_intellect_develop/article/view/116. (accessed 15 May 2017) [In Ukrainian]

Shulska, N.M., Matviychuk N.M., 2017: *Social Networks as an Effective Environment for Teacher-Student Communication in the Educational Process*. In: Information Technologies and Means of Education, 2017, Vol. 58, Issue 2, P. 155-168. [In Ukrainian]

Siemens, G. *Connectivism: A Learning Theory for the Digital Age.* [online] Available at <http://www.connectivism.ca>. (Accessed 1 December 2015).

Strekalkova, N.B., 2016: *Network Communications in Modern Education.* In: Pedagogical Experience: Theory, Methodology, Practice: Proceedings of 6th Internat. Scient.–Pract. Conf. (Cheboksary, Febr. 19 2016)/ Ed. board O. N. Shirokov [et al.], Cheboksary: CSR «Interactiv plus», 2016, № 1 (6), P. 116–117, ISSN 2412-0529. [In Russian]

Volkova N.P., 2006: *Professional-Pedagogical Communication* / Teaching Aid. K.: PH «Academia», 2006, 256 p. [In Ukrainian]

Zakharova I.G., 2010: *Information Technologies in Education* : Teaching Aid for Students of Pedagogical Higher Education Institutions. Moskva: PH «Academia», 2010, 192 p. [In Russian]