

The Concept of Electronic Learning with the Application of Digital Technologies

Galina Shevchenko
North Caucasus Federal University,
Stavropol, Russia, 355017
shgaiiv@yandex.ru

Svetlana Brynza
North Caucasus Federal University,
Stavropol, Russia, 355017
svbrinza@gmail.com

Alexandra Rybakova
North Caucasus Federal University,
Stavropol, Russia, 355017
alexa-510@yandex.ru

Daniil Kochkin
North Caucasus Federal University,
Stavropol, Russia, 355017
daniilandk@gmail.com

Abstract

The article deals with the problem of the importance of training master students, taking into account the educational opportunities of network communication. The importance of the network educational process, which creates favorable conditions for comprehensive, harmonious, professional development of undergraduates, is emphasized. The role of the network community as a basis for professional development of undergraduates in higher educational institutions is substantiated. Attention is drawn to the ideas of learning in a network educational community, functions, levels and types of network interaction. The analysis of foreign and domestic scientific and methodological literature shows that on the current day the problem of improving the quality of higher education can be solved by strengthening its practical and theoretical training. This requires the addition of traditional methodological foundations of the formation of professional development of undergraduates, new information and networking technologies, in the conditions of informatization of education on the basis of existing research and their own experience in the use of learning opportunities in a network educational community concludes on the effectiveness of the technologies used in improving the training of undergraduates in the field of training "Pedagogical education".

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1 Introduction

In recent decades, the most significant phenomenon in the higher education system has become the process of modernization of education, associated with the emergence of network forms of educational activities. To successfully solve the problems of modernization of education requires effective work of all parts of the educational system of higher education – student, teacher, educational organization, including municipal, regional and federal levels. High rates of development of education, as well as the need for continuous professional development require new forms and methods of work.

For the modern stage of the higher education system, the main vector of development is the process of professional development of the future teacher, improving his skills, which would correspond to the strategic objectives of the development of education [Gol11; Bel11; Nov00].

One of the conditions that contribute to ensuring that the quality of education meets these requirements is innovative technologies for the training of future specialists, providing for a comprehensive relationship between the educational process, science and production. In this range of innovations distinguish network training [Bol08].

It should be noted that the network educational community is a technology that provides access to various information necessary to improve the quality of education and improve competencies, as well as providing conditions for self-study of master's students.

There is an opinion [MarWel11] that network communities have many characteristics indicating their significant educational potential. The organization of collective scientific, educational and creative activity of students with the use of network interaction in order to provide professionally – oriented significance of learning outcomes is of great importance for modern education [Dow07].

2 Statement Of Problem

Modern reference points in the field of mastering a profession - obtaining individual professional and pedagogical experience, forming skills to solve professional tasks, actively developed within the framework of the competence approach, set a fundamentally different approach to preparing a future teacher: openness to the world, focus on continuity and variability of education, continuous improvement of their own professional level, ability to work with information.

In this aspect, network interaction is considered as a condition and guarantor of the availability of quality education, continuity of education, an effective factor of professional development, contributing to the training of a competitive specialist and his adaptation to the labor market [Ada19; Bug09].

The network form of training provides the opportunity for master's students to master the educational program using the resources of several educational organizations that provide training for future specialists. To date, various network educational programs are being actively developed for the University level, which are based on academic mobility, modern forms of education (conferences, webinars, joint student research projects, grants). It is this stage that is interesting from the point of view of using different forms of network interaction (in order to improve the quality of education) and preparing students for partnership in their future professional activities [Bon02].

Network educational communities are a special kind of social association of participants, the integration of which appears based on the General discourse in the Internet space with a long and emotional involvement in the communication process [SheBry16; Wen99; Kon10].

To understand the nature of the impact of the network of educational communities on the improvement of training of undergraduates enrolled in the direction of "Pedagogical education", it is necessary to conduct additional theoretical and practical research to:

- understanding the role of network communities in the development of professional competencies of undergraduates;
- scientific and methodological substantiation of the use of pedagogical integration in the network community to improve the training of undergraduates;
- understanding of the methodological work of the teacher in terms of the educational community in accordance with the requirements of the federal state educational standard;
- knowing of didactic opportunities of network educational communities for the organization of psychological and pedagogical, educational and methodical methods of pedagogical interaction "teacher-student".

In this regard, it is necessary to clarify such concepts as "network interaction", "network educational communities", "professional competence", content analysis of the organization of network educational communities.

3 Development Of Methodology

Learning in online educational communities is learning in a specific educational environment, which is characterized by an intensive communication process, high motivation of learning, gaining experience in communicating with other people, supporting each other, learning through practice.

Of particular interest at the same time, are the possibilities of learning in network communities, attracting their potential for the implementation of various forms, methods, methods, methods of training and educational tools, systematically used in the educational process, i.e. pedagogical technologies. These technologies are focused on the development of personal experience, cooperation of teachers and students, as well as the formation of their understanding of phenomena and facts [MoiSoy01].

According to A.N. Sergeyev [Ser09] "the central element in terms of educational opportunities of new technologies is the network community, which operates on the basis of Internet technologies and reveals its activities in accordance with the implemented pedagogical technology."

Network interaction in education and the processes taking place on its basis within the framework of professional self-development require the description and explanation of different sides of pedagogical phenomena taking into account the achievement of unity of terms (concepts).

Thus, to solve the problems it is necessary to:

- clarify the essence of the concepts of "network interaction", "network educational communities";
- highlight the opportunities of training undergraduates in the network community as a means of improving and improving their professional level;
- clarify conclusions about the qualitative characteristics of practices in online educational communities based on the use of content analysis. It should be noted that "network activity", participants of network interaction in the conditions of network educational community, is wider than formal "use of information and communication technologies". Since the participants of this interaction should be ready for joint goal-setting, be able to agree on the results of activities, comply with ethical norms and rules in communication and professional dialogue, necessary at the level of development of the profession and the formation of competencies for effective interaction [SheBryRyb18].

In modern researches and normative documents the network interaction is considered as "the system of horizontal and vertical connections providing availability of high-quality education for all categories of citizens, variability of education, openness of the educational organizations, increase of professional competence of teachers (including use of information and communication technologies" [SheBry16; Sne13].

The main goal and "technological" reference point of this interaction is revealed in the following understanding: network interaction — a system of links that allow to develop, test and offer to the professional pedagogical community innovative models of the content of education and management of the education system; a method of activities for the sharing of resources, contributing to the rational distribution of functionality and resources [Zak10].

This understanding of network interaction at the University level of education reflects the essence of our research and is specified in the following definition — joint activities of educational organizations aimed at improving the quality of educational activities and consists in the exchange of experience, personnel, joint development and use of innovative and methodological resources. It should be emphasized that the joint nature of the activities is carried out through the educational network — a set of subjects of educational activities that provide each other with educational resources in order to improve the effectiveness and quality of education.

Various approaches to the definition and disclosure of the concept of "network interaction" allow us to distinguish:

- *advantages of network interaction*: the formation of a team of like-minded people who develop a common problem; reliance on the initiative and professional achievements of each participant; implementation of non-linear, variable contact of participants with each other; rational allocation of resources in the overall task of activity; variability of routes to achieve a common goal.
- *components of network interaction*: information technology; professional; motivational and value [Ada19].
- *levels of network interaction*: information, distribution of responsibilities, the formation of socio-cultural norms, exchange between educational institutions, the implementation of the educational program.

It follows from the above that the meaning of network interaction in providing professional motivation (recognition by the professional community — the personal level), and in the formation of "professional and creative atmosphere" of the General directions of search, professional interests, development prospects, changes in the education system, improving its quality through the use of interesting and effective innovations presented in the

network.

One of the effective ways to implement network interaction is network educational communities. Under the network educational community understand the community, whose activities are aimed at the implementation of educational tasks in relation to students and teachers, as members of the community, the definition of new approaches to the implementation of pedagogical technologies, built on the basis of the use of computer communication for information exchange on established topics.

The use of network communities in educational activities allows students to transfer not only the amount of knowledge, but also to learn how to acquire knowledge on their own, with the help of the Internet, as well as in the future to use these skills to solve new cognitive and practical problems [SheBryRyb18; YakOsp12].

Network educational communities are aimed at the implementation of one of the most important tasks of the state educational policy of the Russian Federation: ensuring the continuous education of citizens throughout their lives. The continuity of education in network communities implies qualitative changes in the educational space of the learner. In this regard, continuous education can be considered to be comprehensive, individualized in time, pace and focus, providing each member of the community with the opportunity to implement their own training program.

Today, the problems of modernization of professional development in the network are of concern to many scientists and teachers. Most future teachers turn to practice-oriented web pages in search of educational resources in the preparation of the training session. In contrast to practice-oriented web pages, network educational communities provide teachers not only with bases of methodological development of lessons and extracurricular activities in the open access mode, but also with platforms for publishing their own methodological and didactic materials. The effectiveness of interaction between members of the educational community depends not only on the quality of community resources, but also the ability of its members to communicate with each other in the network, which is one of the types of professional interaction.

The need for the formation of target groups of the educational community is caused by the need to solve a set of tasks of the network social organization of specialists:

- improving the system of methodological support of training through the introduction of modern educational technologies and innovative teaching methods;
- ensuring open discussion of topical issues of education;
- improvement of professional skills of teachers;
- organization of joint activities of teachers in a single educational information environment.

By participating in the activities of the network educational community, a graduate student expands his knowledge in the field of pedagogy, methodology, thereby increasing the level of his professional competence. In this study, the professional competence will be understood as an integral characteristic of the individual, which determines its ability to solve professional problems and typical tasks that arise in real situations of pedagogical activity using knowledge, professional and life experience, values and inclinations.

4 Results

Defining the main directions of network communities in education, it is worth noting their innovative activities aimed at the introduction of new content and technologies of General education in specific subject areas, as well as effective support for the implementation of the professional standard of the teacher. In many sources [Han19; KozRadTry05] it is indicated that at the present stage in education there is an active development of the principles of building an educational environment in which students can take an active part in the creation of network content.

In order to Supplement and clarify, based on the application of content analysis of conclusions about the qualitative characteristics of practices in the network of educational communities, we conducted 1) a study of user activity in the developed network educational community "Master" (What gives You participation in the network educational community?). The results of this study are shown in Diagram1.

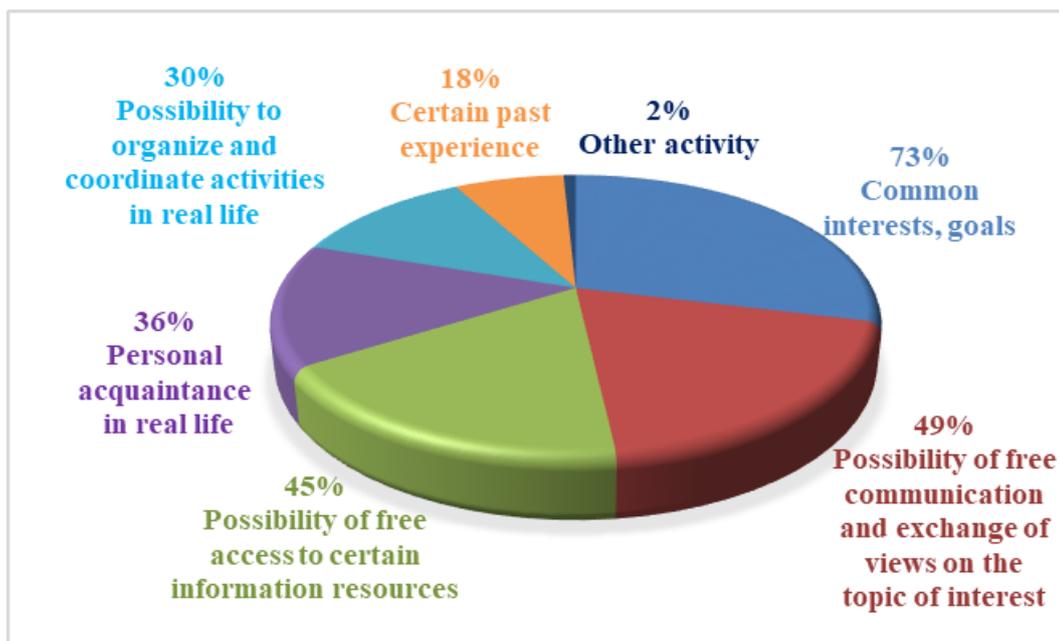


Diagram1. Indicators of activity of users of the network educational community

2) study of the purpose of the user's visit to the network educational community "master" (table 1). The analysis of the obtained data was carried out by the method of online survey using interval scales (discrete scale with descriptors and numbered points, the number of answer options from 1 to 10, where 1 is "not important", 10 is "very important").

Table 1. Grade point average and rank of the intended purpose of the user's visit to the online educational community

Objectives pursued by users when visiting the online educational community	Average score	Rank
Fast and convenient communication	9,0	1
Free access to various information resources	7,8	2
Introduction to other educational practices	7,5	3
Discussion of various professional issues	7,3	4
Expression of ideas, opinions, creative self-expression	6,7	5
Organization of collective activities	6,4	6
Search for friends, associates, interesting pastime	6,3	7
A sense of support, involvement	6,1	8
Organization of personal space (organization of meetings, events, reminders, etc.)	6,0	9
Creating a new image, the image of a modern teacher	5,9	10

Analysis of the results of the table shows that most of the goals pursued by users when visiting the online educational community are based on meeting communication and information needs that are directly personal in nature (ranks 1–3, 5, 9). Collective practices - discussion of various problems, organization of collective activities, search for friends, like-minded people, etc. have a little less weight (respectively, ranks 4, 6-8, 10).

5 Discussion

The results of the study allow us to note that the organization of network interaction in the educational community provide individuals with a variety of channels and means for professional self-design, self-development:

- to realize the essence and social importance of the future profession, to show constant interest in it;
- implement search, evaluation and analysis of information necessary for solving professional tasks;
- apply information and communication technologies to improve professional performance;
- function in a team and team, interact with management, colleagues and social partners;

- to determine the objectives of professional and personal development, to educate ourselves, consciously plan refresher training;
- systematize and evaluate the experience gained through the development of professional literature, self-analysis and analysis of the activities of other researchers;
- design development in the form of reports, abstracts, speeches;
- carry out research and project activities.

Analysis of the network of educational communities from the perspective of the conditions of professional self-development of undergraduates showed that participation in the network of communities — is primarily a way to professional growth, improving professional competence, the acquisition of future teachers of informal distance education, participation in professional network competitions at the regional and federal level, the study of innovative experience of colleagues, training through joint activities, the dissemination of their own experience of educational activities.

Thus, the improvement of training of undergraduates in the direction of "Pedagogical education" in the network of the educational community contributes to the satisfaction of cognitive interests of master student, reveals its potential mental capabilities, causes an emotional state that expresses the student's personal positive attitude to learning activities and a sense of self-satisfaction.

6 Conclusion

The development of information and communication technologies, their use in education encourages the discovery of new, relevant approaches to the organization of the learning process on the basis of network interaction. Practice shows that the modern teacher should be able to keep pace with the times, and therefore own ways to effectively obtain knowledge, use and implement them in the educational process. Undoubtedly, the advantage of network interaction in the conditions of network educational community is the creation of prerequisites for the formation of not a narrow professional specialist, but a creative person who perceives the world as a whole and is capable of coordinating interests, cooperation, and active actions in the social and professional sphere.

For master's degree students training in the conditions of network educational community organized on the basis of network interaction makes the development of the educational program with the use of resources of several educational organizations that implement the training of future specialists. Competition and exchange of experience of educational organizations associated with network activity, contributes to improving the quality of education in general. .

References

- [Gol11] Golobova N.L. Povysheniye professional'noy kompetentnosti slushateley v mezhkursovoy period pri ispol'zovanii vozmozhnostey setevykh soobshchestv pedagogov. Monografiya. Vestnik TO-GIRRO, N6(18). – Tyumen': TOGIRRO, 2011. – 120 s.
- [Bel11] Belotserkovskiy A.V. O "kachestve" "kolichestve" obrazovaniya // Vyssheye obrazovaniye v Rossii. 2011. N 4. S. 3-9.
- [Nov00] Novikov A.M. Rossiyskoye obrazovaniye v novoy epokhe // Paradoksy naslediya, vektory razvitiya. – M.: Egves, 2000. – 272 s.
- [Bol08] Bol'shakova O.N. Innovatsionno-obrazovatel'nyy protsess v sovremennom vuze // Filosofiya obrazovaniya. – 2008. – N4. – S. 184-190.
- [Mar11] Martin A., Wellman B. Social Network Analysis: An Introduction, 2011. .132.
- [Dow07] Downes S. Models for sustainable open educational resources // Interdisciplinary Journal of Knowledge and Learning Objects. 2007. Vol. 3. P. 29-44.
- [Ada19] Adamskiy A.I. Model' setevogo vzaimodeystviya. URL: <http://upr.1september.ru/2002/04/2.htm> (data obrashcheniya 04.03.2019).
- [Bug09] Bugrova N.S. Setevoye vzaimodeystviye v sisteme povysheniya kvalifikatsii pedagogicheskikh kadrov: Avtoref dis. ... kand. ped. nauk. Omsk, 2009. – 24 s.

- [Bon02] Bondarenko S.V. O tipizatsii virtual'nykh setevykh soobshchestv obrazovatel'noy napravlenosti // V sb. Aktual'nyye problemy sovremennoy sotsiologii. -Rostov-na-Donu: Pegas, 2002. S. 29-40.
- [She16] Shevchenko G.I., Brynza S.YU. Setevoye vzaimodeystviye kak usloviye sovershenstvovaniya podgotovki magistrantov po napravleniyu pedagogicheskoye obrazovaniye // Mir nauki, kul'tury, obrazovaniya. 2016. N 1 (56). S. 226-228.
- [Wen99] Wenger E Communities of Practice. Learning, meaning and identity. Cambridge: Cambridge University Press, 1999. -P. 612-616.
- [Kon10] Konchakovskiy R.V. Setevoye internet-soobshchestvo kak sotsiokul'turnyy fenomen: Avtoref. dis. kand. sotsiol. nauk. Yekaterinburg. 2010. – 22 c.
- [Moi01] Moiseyeva M. V., Soyfert S. Fenomen virtual'nykh uchebnykh soobshchestv // Informatsionnoye obshchestvo. 2001. N 4. S. 51-53.
- [Ser09] Sergeyev A.N. Komp'yutery i Internet v obrazovanii: realizatsiya proyektov i obucheniye v soobshchestvakh // Izvestiya Volgogradskogo gosudarstvennogo pedagogicheskogo universiteta. Ser. Pedagogicheskkiye nauki. 2009. N 1 (35). S. 64-68.
- [She18] Shevchenko G.I., Brynza S.YU., Rybakova A.A Pedagogicheskaya ntegratsiya v usloviyakh setevogo obrazovatel'nogo soobshchestva// KANT. Mezhdunarodnyy nauchnyy zhurnal, dekabr' N4(29) Stavropol', 2018. S. 100-105.
- [Sne13] Snegurova V. I. Podgotovka setevogo uchitelya v sisteme mnogourovnevogo obrazovaniya// Vestnik severnogo (arkticheskogo) federal'nogo universiteta. Seriya: Gumanitarnyye i sotsial'nyye nauki. 2013. N6. -S. 154-158.
- [Zak10] Zakharova I.G., Informatsionnyye tekhnologii v obrazovanii: ucheb. posobiye dlya stud. vyssh. ucheb. zavedeniy // 6-ye izd., ster. – M.: Izdatel'skiy tsentr "Akademiya", 2010. – 192 s.
- [Yak12] Yakovleva I. V., Ospennikova Ye. V. Obrazovatel'noye znacheniyetelevykh sotsial'nykh servisov// Pedagogicheskoye obrazovaniye v Rossii, 2012. N 5. -S. 118-121.
- [Han19] Hanneman R. Introduction to Social Network Methods // UCR Computing and Communications: <http://faculty.ucr.edu/hanneman/home> (data obrashcheniya 06.03.2019).
- [Koz05] Kozyreva V. A., Radionova N. F., Tryapitsyna A. P. Kompetentnostnyy podkhod v pedagogicheskom obrazovanii: kollektivnaya mono-grafiya // pod red. V. A. Kozyreva, N. F. Radionovoy, A. P. Tryapitsynoy. – SPb.: Izd-vo RGPU im. A.I. Gertsena, 2005. – 392 s.