Effective Communication Technologies

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ABSTRACT

The purpose of the article: the coverage of the use of effective communication technologies that provide continuous professional development of teachers based on the interaction of subjects in a professional educational environment. In the article, the essence of communication is defined at the theoretical level and the concept of effective communication is given. It is determined that interaction in professional networks is a modern technology of effective communication aimed at developing the professionalism of teachers. Based on an expert survey, options for building a professional network, stages of formation of interaction in professional networks in the system of professional development of teachers, as well as main characteristics, features, and levels of interaction in professional networks, are determined. A separate subject of the research is social networks and their role in the professional development of teachers.

Key words: communication, information and communication technologies, professional network, social network, interaction technology in professional networks.

1. INTRODUCTION

The modern era is associated with the intensification of globalization processes, the complication of sociopolitical, economic, and cultural life, as well as the rapid development of information and communication technologies. Features of social development have caused changes in the composition, structure, and scale of social activity. The increase in the dynamism and complexity of socio-economic, scientific, technical, and production processes has led to a significant increase in the amount of information that is generated and circulated in society. The rapid development and implementation of innovative technologies in all spheres of public life has accelerated the integration and communication processes. Exchange of information, people's perception of each other, cohesion, and conflict are the phenomena of the 21st century. Studies of the category "communication" are being activated and the question of the relationship between communication and professional activity becomes fundamental since people not only communicate in the process of performing certain functions but in the corresponding professional activity as well.

Thus, the role of communication in modern society is steadily growing, ensuring the creation of communicative comfort for every professional and the professional environment in general. This is why the problem of communication is one of the most important in the post-industrial and information society. This is especially true of the educational sphere, created to ensure the preparation of a person for life in a world of diverse relationships and communication opportunities.

The way the standards and mechanisms of social functioning change necessitates the modernization of the professional development system of teachers in order to form competent and competitive specialists who effectively carry out multifunctional pedagogical activities.

The requirements for the professional development of teachers in the context of educational reform are constantly being transformed. The transformation of the requirements for the professional development of administrators and teachers requires the use of effective communication technologies based on modern educational resources. The community of heads of educational institutions and teachers interested in using various types of resources for the purpose of professional development has already created; it gains certain experience through joint interaction.

2. LITERATURE REVIEW

In scientific literature, communication, as a formal category of knowledge, is associated in various ways in different areas and contexts. With regard to this, V. Kashkin notes that there are almost as many definitions of this term as there are authors who study it [1, p. 15]. The well-known semiotics

researcher R. Jacobson defined communication as the process of transmitting information between people using sign systems (signals) [2, p. 199]. Russian culture expert Y. Lotman considered communication as a translation of the text from the language of one's "I" into the language of one's "you". The definition of Y. Lotman directs attention precisely to the one who transfers the information: the transmission of information requires certain skills, in particular, a perfect knowledge of the recipient's "language" and practical ability to translate the text from the language of one's "I" into the language of one's "you" [3].

In the context of philosophical science, communication is considered as a companionship, entering into relationships on the basis and with the use of various means of human interaction. Communication involves economic, political, information, and other relationships between people, as opposed to dialogue, which basically involves lively human participation in communication [4]. Psychologists also note the proximity of the terms "companionship" and "communication". The large Psychological Encyclopedia defines communication as the interaction of two or more people, consisting of the exchange of information between them [5].

In general, the analysis of modern scientific sources confirms that the term "communication" is defined differently by researchers of various scientific and professional fields. Sharing the opinion of G. Pocheptsov, under communication, first of all, we understand the process of active and accelerated exchange of information [6, pp. 86-87].

Effective communication, says U. Dick, is a focused interaction that is directed to the understanding of the interlocutor and its means contribute to the establishment and development of contacts, positive relationships, study of personal characteristics, and so on. Moreover, the communication core is not the ability to send a verbal or non-verbal signal, but the ability to organize an ensemble of one's own signals and perceive the ensemble of the signals of the partner. Thus, effective communication is such a process of transmitting a message when the received message is as close as possible to its original meaning.

According to researchers [8-10], the modern technology of effective communications, aimed at developing the professionalism of teachers, is interaction in professional networks. An important condition for the application of this technology is the competency model, which is based on the scientific and theoretical foundations for the development of professionalism of administrators and teachers and involves the use of interactive, project technologies for professional development in accordance with the challenges of the time [11].

Interaction is considered as a broad general term that means a joint action of several objects or entities, according to which, the result of the actions of one of them affects the professional development of the subjects [12, 13]. Moreover, a network is defined as a special type of relationship between the positions of individuals, objects, or events, which are selected depending on the goals of building the network. It is interpreted as an expanded group of people with similar interests who interact with each other and maintain informal contacts with the aim of mutual support and assistance.

According to T. Trust, interaction in professional networks is a technology of interaction between educational institutions and partners in order to ensure the effectiveness of the educational process and achieve high-quality education. This technology provides for the involvement of all potential partners and their complex of resources in the process of professional development of teachers [14]. The partners involved in networking can be the following communities: universities, postgraduate education institutes, city (district) teaching centers, leading educational institutions, teachers who acquired the status of trainers, tutors, experts, and consultants in professional development projects, scientific institutions, public organizations, and international projects [15].

Research hypothesis: The technology of interaction in professional networks of heads of educational institutions and teachers is an effective communication technology that provides an effective solution to the problems of professional development of leaders and teachers, focuses on substantively relevant problems of professional pedagogical activity, and is used taking into account the resources, capabilities, and needs of the subjects of interaction.

3. PROPOSED METHODOLOGY

3.1 General description

The study used a combination of theoretical and empirical methods:

theoretical – content analysis (analysis of pedagogical concepts), functional analysis (identification of technology interaction features in professional networks), system analysis (systematization of the research results);
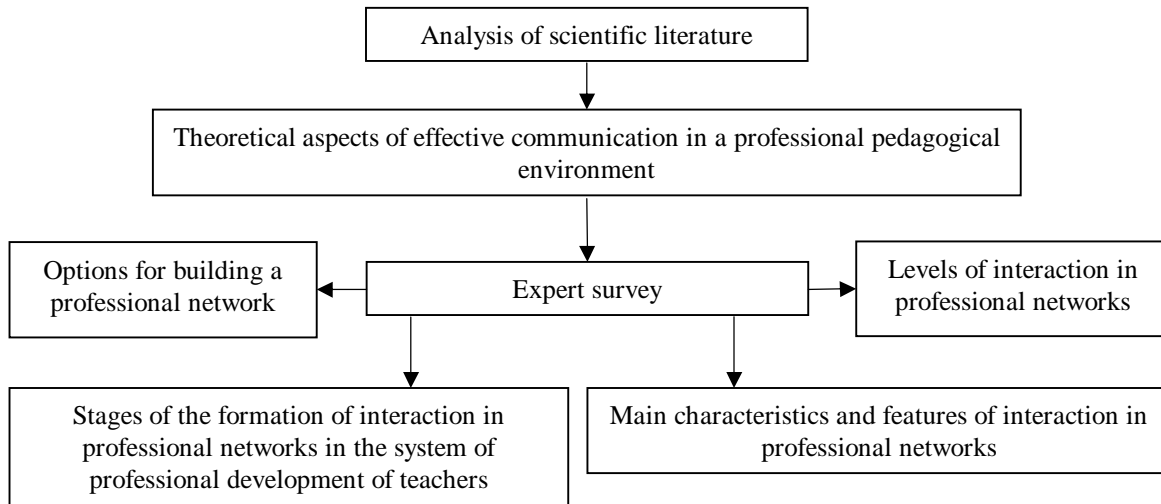
empirical – an online expert survey of teachers from Russian universities and teacher training institutions (35 experts).

3.2 Algorithm

At the first stage of the study, an analysis of the scientific literature on the problem of effective communications in a professional pedagogical environment was carried out.

At the second stage of the study, the definition and generalization of the main options for building a professional educational network at the regional level were carried out. The characteristics of the stages of formation of interaction in professional networks in the system of professional development of teachers were given, as well as the main characteristics, features, and levels of interaction in professional networks.

3.3 Flow chart

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┌─────────────────────────────────────┐
│     Analysis of scientific literature │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────────────────┐
│  Theoretical aspects of effective communication   │
│    in a professional pedagogical environment      │
└─────────────────────────────────────────────────┘
                  │
                  ▼
┌──────────────────┐   ┌──────────────┐   ┌──────────────────┐
│ Options for       │◄──│ Expert survey │──►│ Levels of        │
│ building a        │   │               │   │ interaction in   │
│ professional      │   │               │   │ professional     │
│ network           │   │               │   │ networks         │
└──────────────────┘   └──────────────┘   └──────────────────┘
                   │              │
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┌──────────────────────────────┐ ┌──────────────────────────────┐
│ Stages of the formation of    │ │ Main characteristics and       │
│ interaction in professional   │ │ features of interaction in      │
│ networks in the system of     │ │ professional networks          │
│ professional development of   │ │                                │
│ teachers                      │ │                                │
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4. RESULT ANALYSIS

According to experts, a professional network in the field of education at the regional level can be built in two main options.

Table 1: Options for building a professional network in the field of education

№	Title	Characteristic
1	parity cooperation	integration of several educational institutions around one of them, which has the largest material and human resources, and will serve as a "resource center" for other educational institutions
2	resource center	use by a separate educational institution of professional resources of institutions of postgraduate teacher education, higher and vocational education

Note: compiled on the basis of the expert survey

According to the expert community, the formation of interaction in professional networks in the regional system of professional development of teachers goes through several stages (Table 2).

Table 2: Stages of the formation of interaction in professional networks in the system of professional development of teachers

Stage number	Stage content
1	creation of a common resource center
2	search for potential partners
3	formation of the interaction of the resource center with partners, conclusion of cooperation agreements, holding seminars, scientific and practical conferences, professional development projects for teachers
4	expanding the network by attracting new participants, first of all, the new participants in the interaction are teachers who in the professional development projects have acquired the status of trainers, tutors, experts, and consultants

Note: compiled on the basis of the expert survey

Experts presented the main characteristics and features of interaction in networks (Table 3).

Table 3: Main characteristics and features of interaction in professional networks

№	Characteristic	%*
1	networks are the most successful and competitive projects in the system of professional development of teachers	91%
2	in the network, the main character is an active person, around whom associations, associations, societies, etc. are formed.	86%
3	hierarchy in the network is decentralized (including the phenomenon of "split leadership"), so there are several	86%

	leaders	
4	informal relationships are sometimes more important than formal	80%
5	network organizations do not have structural divisions within themselves, as they are a single whole	80%
6	network structures are changeable, do not exist for long, that is, if tasks change, then yesterday's associations, associations, societies, and unions are destroyed and new ones arise	77%
7	information technology creates bonds that generate non-linearities and cause many new possibilities in the form of bifurcations	71%
8	networks are more effective than governing bodies, the organizer of interaction	71%

Note: compiled on the basis of the expert survey

Experts identified several levels of interaction in professional networks (Table 4).

Table 4: Levels of interaction in professional networks

№	Level	Level characteristics	%*
1	information level	educational institutions exchange information and there are effective information flows between them	86%
2	burden-sharing level	presupposes a diversity of educational institutions, aimed at meeting various professional needs of educators	80%
3	level of formation of social and pedagogical standards	at this level, primary schools are able to agree on common evaluation criteria for the managerial and pedagogical experience of everyone	77%
4	level of resource exchange between educational institutions	different types of shared resources appear in the network	77%
5	implementation level	implementation of the professional development projects for administrators and teaching staff	71%

Note: compiled on the basis of the expert survey

Thus, the relationships between educational institutions, administrators, and teaching staff are established depending on the goals of building the network.

5. DISCUSSION

As experts believe, the purpose of using modern technologies of effective communication in the professional environment is to ensure the efficiency of the educational process and achieve the quality of education through the professional development of administrators and teachers.

In the professional development of administrators and educators, the technology of interaction in networks is innovative. Instead of traditional vertical connections, it provides horizontal, informative, cooperative connections, i.e. partnership and collaboration. The network's "nodes", as experts note, are original models of educational institution management, original scientific schools, innovative pedagogical experience, etc. As experts specify, interaction in networks cannot be organized from outside or from above, by administrative means. It is formed as a natural, evolutionary process of human independent activity, through cooperation, self-organization, and self-development in the professional development of administrators and pedagogical workers. At

the same time, there is a certain specificity of interaction between the subjects of the network. It requires constant effort, organization of meetings and negotiations, consideration of the context, in which the network partners are constantly present, as well as the presence not only of a leader who is willing to take responsibility but also of a rather large number of people who have the same desire.

According to experts, the technology of interaction in the professional networks extends to educational institutions, teachers, and creative groups of teachers and requires the active use of innovations, managerial and pedagogical experience of educational institutions, administrators, and teachers, as well as the participation of partners. In addition, the technology is provided by information resources presented by scientific and methodological publications for teachers, periodicals, websites, blogs, etc.

In experts' opinion, the implementation of the technology of interaction in professional networks requires thorough training of the leading participants and providing the opportunity for teachers to use modern educational resources, internal and external professional contacts of teachers with their colleagues, managerial and pedagogical experience. At the same time, interaction in professional networks requires

cooperation and integration of resources of educational institutions. The necessary conditions for interaction in professional networks are scientific and methodical support, voluntariness and partnership of network members, scientific understanding of the essence of the professional network.

Experts point out that the presence of a common set of issues is important for interaction in professional networks and approaches to its solution may vary. Interaction in professional networks is a systematic method of projecting and implementing the whole process of professional development of teachers taking into account technical and human resources and their interaction. According to one of the respondents, "The technology of interaction in professional networks is intended, first of all, to optimize the professional development of administrators and teachers through continuous training".

Experts say that, in their practical activities, educational institutions constantly interact with each other on various issues of educational organization, work with teaching staff, exchange of managerial and pedagogical experience, etc. As a result, the vertical and horizontal interaction of educational institutions with each other and their partners and the quantitative and qualitative composition of these institutions form an appropriate educational network of the region. For instance, such partnerships are formed by associations of educational institutions, teachers' associations, networks of socio-cultural institutions, different communities, societies, etc. In the interaction of a particular educational institution with other partners, such principles as voluntariness of communication, collaboration, cooperation, equality, partnership, and lack of hierarchical subordination come into force. It is also essential that such interaction occurs at the initiative of interested partners.

Special attention in the professional development of teachers, according to experts, should be paid to social networks, which provide an opportunity for a person to carry out professional development. Taking this into consideration, social networks of professional fields as innovative forms of self-improvement become widespread.

Thus, the "Classroom 2.0" network environment, which is the most popular educational network developed by S. Hargadon, contributes to the professional development of teachers on issues related to the introduction of Web 2.0 technology tools into the learning process [16].

Another network that can be fully considered a tool for Russian teachers is "Microsoft Education Partners", which was launched by Microsoft. With its help, secondary education employees can learn more about the use of information and communication technologies to improve the quality of education. The network "Microsoft Education Partners" provides access to educational programs for schools, including lesson plans and practical classes and allows teachers to exchange ideas, news, and their own experience of using information and communication technologies for learning [17].

In the opinion of experts, it is reasonable to identify teacher-researchers as a separate group, due to whom different kinds of communities appear on a daily basis, which focus on the exchange of scientific ideas and problematic issues. For example, Facebook reflects university communities and provides an opportunity to expand knowledge. This is proved by various groups, including Biology, Geology Rocks, Matematika, Science Group, Theoretical Physics. In addition, with regard to the subject matter of science, there are the following pages: "A Moment of Science", California Science Center, International Association for Political Science Students, National Science Foundation, Popular Science, Science Careers. These pages contribute to obtaining information about scientific discoveries, provide an opportunity to comment and be an active member of the group, which stimulates the intellectual development of individuals [18].

The social network VKontakte, as experts note, also includes a list of groups of people with scientific interests, among students, teachers, and scientists. While its functionality is generally reflected in the exchange of information, the boundaries of its use have their own peculiarity. The key point is that the communities created by students and teachers are more local in their nature because the participants are organized mainly within the specialty, institute, university, etc., without going beyond the borders of the educational institution and the country in general. However, the groups organized by scientists cross the borders of the country in order to find participants with similar scientific interests.

Experts identified such social networks that allow teachers and scientists to be structural elements of the social network and to provide a better learning process. However, in their view, networks that draw on the participation of all those who strive for continuous development, updating of knowledge, i.e. those who are outside of formal education deserve special attention.

As experts specify, apart from networks of general subjects and specialized networks, there are so-called business networks, which are more appropriate to the level of the organization, contributing to professional development and career-building of the individual. Such networks are popular among human resources specialists. To a certain extent, they are the equivalent of a CV, allowing the user to find a job and the employer to hire an employee with appropriate skills.

Corporate social networks provide access to information, text publishing, multimedia materials that are necessary for collaborative work. The advantage of corporate social networks is also the ability to discuss issues of various kinds. Forums, blogs, comments, feedback, etc. facilitate the rapid exchange of information between employees and help to obtain certain knowledge necessary for the fulfillment of functional duties.

In this context, it is useful to talk about the possibility of using social networks for different forms of learning: IOL – Intra

Organisational Learning; FSL – Formal Structured Learning – opportunity for educators (teachers, trainers); GDL – Group Directed Learning; PDL – Personal Directed Learning; ASL – Accidental & Serendipitous Learning [19].

In general, as experts claim, due to these features, social networks can be considered a tool that provides the efficiency of the educational process, as social networks present a variety of opportunities for different participants of the scientific process. For a teacher this includes:

1. For personal development: the process of communication with colleagues; learning foreign languages; exchange of ideas in the creation of scientific and educational projects;

2. For educational purposes: communication with students in a remote mode (send tasks, comment, make remarks, etc.); possibility of participation in the social network of the group on scientific or educational interests; exchange – possibility to share with students necessary materials (lectures, practical tasks, presentations, etc.);

3. Opportunity to get advice from specialists on legislation, health care, culture, economics, etc.; opportunity to communicate with friends on issues of personal occupation.

The main features of the use of social networks among teacher-researchers and scientists are as follows: the opportunity to discuss problematic issues of science and education, to initiate new ideas, to comment and influence the results of scientific research, to at the heart of science; to participate in international projects aimed at solving scientific and educational problems, to participate in grant programs, to be potential partners for successful research in Russia and in the world in general, to place announcements of scientific events in Russia and abroad, to give advice and recommendations and get experience from specialists from different branches of science, to be a participant of joint projects of science and business.

6. CONCLUSION

Network interaction in the educational environment contributes to increasing the efficiency of all forms of professional development of teachers. Opportunities for network interaction on the improvement of the system of professional competence increase of teachers are significant. They are aimed at modernizing the process, increasing its efficiency, providing continuous professional development and self-development of teachers, more active use of modern forms of professional competence, systematization, theoretical justification, and distribution of innovative pedagogical experience.

Thus, the results of the study confirmed the hypothesis that the technology of interaction in the professional networks of educational institution administrators and teachers is an effective communication technology that provides efficient solutions to the problems of professional development of administrators and teachers, focuses on the relevant issues of

professional pedagogical activity, and is used with consideration of the resources, capabilities, and needs of interacting subjects.

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