

## Modernization of Preschool Education: Information and Communication Competences of a Teacher

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### Abstract

Modernization of the educational system as it is defined in the Concept of a long-term socio-economic development of RF for the period to the year 2020 is a foundation for the economic growth and social development of society, a factor of the citizens well-being and country security. Modernization touches upon the structure, content and technologies of upbringing and education on all the levels of the educational system.

In the Federal Law "On Education in the Russian Federation" an essential role is assigned to the system of preschool education. On January 1, 2014 the Federal Standard of Preschool Education came into effect.

The relevance of the problem under study is determined by the fact that in light of the adopted national programme for modernization of preschool education the information and communication expertise of a teacher takes one of the lead places. The contemporary researchers specify the information expertise of a teacher among the baseline competences.

The need to study the given problematics is conditioned by discrepancy between the necessity to introduce information and communication technologies into the professional and educational activity of a teacher in a preschool educational organization and the low level of maturity of competences and motivation to master and introduce them.

The objective of the paper consists in substantiation of conditions for development of the information and communication expertise of a teacher in a preschool institution in light of modernization of the preschool educational system.

The lead approach to the research of the problem is a pedagogical experiment consisting of the summative, formative and controlled stages enabling to reveal the maturity level of the information and communication competences of a teacher and the level of motivation to introduce into proper professional and educational activity.

The authors have analyzed the problems of modernization and informatization of a preschool educational system on the modern stage, professional expertise of a teacher as a basis for establishing new quality of education, and information and communication technologies of a preschool educational organization. The research of introduction of information and communication technologies into the educational process of a preschool educational organization was conducted, and model of managing the process of development of the information and communication expertise of a modern teacher was proposed.

The academic novelty of the research is that there were revealed the organization-pedagogical and psychological conditions required for the efficient management of the process of development of the information and communication competences of a teacher in a preschool educational organization in light of modernization of the preschool educational system.

The materials of the paper can be useful for building the information and educational environment in a preschool educational organization, as well as for planning the activities of methodological departments of the preschool education management.

**Keywords:** modernization, preschool education, teacher, information and communication expertise, competences.



## Introduction

The primary objective of the Russian educational policy is to ensure modern quality of education on the basis of retention of its fundamental nature and compliance with the urgent and long-range requirements of a person, society and state. The goal of the education modernization consists in creating a mechanism of sustainable development of the educational system.

The preschool age is the crucial period for the personality development of a child. To achieve the optimum level of development of each preschool age child that will allow him/her to be successful at school is one of the priority objectives of the preschool education development in the Russian Federation. It cannot be settled without a flexible multifunctional system of a preschool education securing the constitutional right of every citizen of the Russian Federation for the generally accessible and free preschool education [1].

The system of a preschool education is a social institute of prime importance and necessary condition for the normal social development. The logic of modern development of the Russian education assumes the focus on new goals and realias which determine the life of society [2].

On September 1, 2013 the Federal Law "On Education in the Russian Federation" came into effect [3] where an essential role is assigned to the system of preschool education. On January 1, 2014 the Federal Standard of Preschool Education came into effect [4].

Modernization of the education system as it is defined in the Concept of a long-term socio-economic development of RF for the period to the year 2020 is a foundation for the economic growth and social development of society, a factor of the citizens well-being and country security. Modernization touches upon the structure, content and technologies of upbringing and education on all the levels of the educational system [5].

The modern model of education focused on the education quality enhancement is presented in the Concept of a long-term socio-economic development of RF for the period to the year 2020. "The developing society requires modern equipment, moral and entrepreneurially-inclined people who can take responsible decisions in a situation of choice forecasting their potential consequences, are good at cooperation, and distinguished by mobility, dynamism and constructiveness."

The primary objective of the educational policy in the sphere of preschool education is to ensure the guarantees of an accessible and quality preschool education providing equal starting conditions for the subsequent successful education of a child at school.

The accessibility at that is characterized by the possibility to choose the nursery school, and quality – by the possibilities and capabilities of a child to master programmes on the subsequent levels of education. In order to improve the quality of the educational service the following is required: participation of citizens in the development of preschool education (evaluation of the education quality, formation of the education content, investment in the preschool education); extension of organizational forms of preschool education; elaboration and introduction of a new system of labour remuneration of nursery teachers; introduction of a normative per capita financing in the system of preschool education.

Such key qualities for the present society as creativity and capability for the search of knowledge are already formed at the age of 3–6 years. Therefore the contemporary model of education assumes high technologies for development of imagination, literacy and other basic skills of children. The modern educational standards are based on transition from the attitudes of memorizing bulk information to mastering new types of activity – project-oriented, creative and research.

A variety of problems facing a modern teacher requires of him/her the knowledge of information technologies, ability to efficiently cooperate with other people, fully use personal resources, willingness to implement proper educational path securing successfulness and competitiveness [6].

Therefore training of specialists in the sphere of preschool education acquires special value. Currently not just a nursery teacher but research-teacher, psychologist-teacher and technologist-teacher is in demand.

The primary directions of modernization of a preschool education are as follows:

- full coverage of children aged above three by preschool education;
- change of the financing system of preschool institutions: transition from the municipal to the regional level;
- ensuring standartization of preschool education since the preschool education becomes a part of the general education, its first step;



- learner-centered education of preschoolers;
- renewal of resources of the educational environment;
- creation of new mechanisms for the education quality assessment;
- introduction of new forms of social partnership;
- informatization of the educational space (systematization, renewal of information resources, development and approval of technologies of the multimedia support of the educational process, elaboration of a system of a consulting methodological support in the sphere of modern communication technologies being mastered by teachers and application thereof in the educational practice of a preschool educational institution, creation of a bank of electronic educatory and developing cycles, programmes, didactic and methodological materials on the basis of introduction of information technologies into the activity of a preschool educational institution);
- provision with sports facilities and modern playgrounds, education and laboratory equipment and means of transportation;
- creation and running of proper web-sites for preschool institutions;
- creation of resource centres in regions, coordinating the development processes in a preschool educational institution to reveal and support gifted children at an early age, and their professional development;
- contentment of the population with the quality of preschool education;
- activation of the development of a preschool educational institution by means of joint work with parents and municipal community;
- improvement of professional training of teachers of preschool institutions; the reform of salary and elaboration of professional standard for the teachers occupied in preschool education is instrumental in it [7].

Under conditions of preschool education modernization the problem of health preservation and promotion becomes especially acute. The issues of the formation of healthy lifestyle by the rising generation are not discussed in the modern didactics any more, but are considered universally recognized. They are elevated to a state policy.

The Law "About the Education in Russian Federation" defines preschool education as a full-value and the first level of the general education system (chapter 2, p.10) and one of the objectives of nurseries is to preserve and promote the health of children (chapter 7, p. 64). Moreover, in the Federal National Requirements to the structure of the primary educational programme of preschool education, the educational sphere "Health" was detached for the first time as an independent sphere with the priority objective to shape initial notions about healthy lifestyle [3,4].

On the modern stage of development and modernization of the Russian education, the psychopedagogical studies raise the issue of the necessity to highlight the objective of healthcare of children and reduction of diseases through the development of motivation for healthy lifestyle, and creation of conditions in educational institutions for preservation and promotion of children's health [8].

The modern children were born and live in the information society where the information and educational environment is already actively formed and functions beginning from the first element of continuous education – preschool educational institutions. The key objective of the information and educational environment in a nursery is to generate the potential for the enriched development of a child's personality and prepare it to life in the information society. For this purpose taking into account the specific nature of the preschool childhood it is required to familiarize children with the elementary foundations of the information culture. It is important to develop their interest to the modern technologies, essential scientific discoveries, gradually enrich their notions in the area of information and communication technologies, develop knowledge and skills, generate the need to use the modern equipment and advanced technologies in various types of activity.

In modern information society the civilization development is based on the information processes where information and communication technologies are widely used. Introduction of the information and communication technologies into all spheres of human activity resulted in the occurrence and development of the global process of informatization.

In its turn the process provided an impetus for the development of the education informatization which is one of the key conditions for reforms and modernization of the system of domestic education since



it is the educational sphere which trains and educates people who not only form a new information environment of society but have to live and work in this new environment themselves.

Russia just as many other countries of the global community pays more and more attention to the problem of education informatization which is considered as one of the most critical strategic problems of the civilization development.

The education informatization shall be understood to mean the purposeful activity to develop and introduce the information and communication technologies having the following directions:

- in the educational process to prepare a person to life and activity under the conditions of a modern information society; improve the quality of the general educational and professional development of specialists on the basis of a wide use of information and communication technologies;
- in the management of the education system to enhance efficiency and quality of the management processes;
- in the methodological and research-pedagogic activity to improve the quality of teachers' work; develop and introduce new educational technologies on the basis of use of information and communication technologies [9].

An essential direction in the development of educational organization in the sphere of information and communication technologies (ICT) is the development of expertise of teachers and heads of the educational organization. The process implies the creation of the information space inside the educational organization.

J. Raven defines the expertise as a special human ability required to perform a specific action in a specific subject area including narrowly-specialized knowledge, skills, ways of thinking, and readiness to bear responsibility for one's actions.

N.F. Efremova adhering to synergetic approach defines competences as "generalized and profound mature qualities of a person, the ability to use and apply the obtained knowledge and skills most flexibly;" "a set of knowledge and skills enabling a subject to adjust to changing conditions, the ability to act and survive in the given conditions" [10].

In the periodical press the problem of development and introduction of the information and communication technologies in preschool educational organizations has been discussed for already several years. The lead domestic and foreign scholars, specialists in the area of preschool education express their viewpoint "pro and con" of the information and communication technologies. In general, the scholars note the developing role of the computer-based play structure in a nursery in activity with children. It is emphasized that "the society informatization sets an objective for the nursery school teachers to become a guide for a child into the world of new technologies, and an instructor in the choice of computer games, and shape the foundations of the information culture of a child's personality" [11-15].

The information space shall be understood to mean a team of like-minded people willing, able and having certain conditions for the development and formation of the information model of the educational organization, use of information and communication technologies in the educational process and in management of the educational organization, and successfully developing the electronic cooperation and partnership with the virtual educational pedagogic associations, universities, Ministry, superior governing bodies and administration [16].

The information technology is a complex of methods, ways and means ensuring storage, processing, transfer and display of information, which are oriented at enhancement of efficiency and labour productivity. At the present stage the methods, ways and means are directly interconnected with a computer (computer technologies) [17, 18].

Communication technologies determine the methods, ways and means of human interaction with the external environment (the reverse process is also important). Computer takes its place in these communications. It provides comfortable, individual, diversified and highly intellectual interaction of the communication objects. While combining information and communication technologies, projecting them on the educational practice it should be noted that the primary objective of introduction thereof is human adaptation to life in the information society.

It is totally clear that the information and communication technologies become the key tool to be used by people not only in professional activity but in daily life as well [19, 20].





However, as of today there is no clear system to develop such expertise while methodological recommendations and textbooks available represent some sketchy data without distinct structure and logic. Such textbooks are hard to use and do not represent any possibility to develop the information and communication expertise by a teacher on such a level that is declared in the regulatory documents.

The contemporary researchers specify the information expertise of a teacher among the baseline competences [21-23]. In other words teachers with the help of information technologies should be able to search, analyze, select, process and transfer the required information on their own.

The information and communication expertise of a teacher shall be understood to mean "the ability and readiness to arrange one's professional pedagogic activity using the means of information and communication technologies; implement the information interaction between all participants of the educational process" [20, 24].

In the Occupational Standard of a Teacher (as of October 18, 2013, No. 544n) a group of requirements to a modern teacher in the area of competences associated with the information and communication technologies is specified [7].

According to the document a teacher of the preschool educational organization shall have the following information and communication competences:

- all-user information and communication expertise;
- general pedagogic information and communication expertise;
- subject-specific pedagogic information and communication competence (reflecting the professional information and communication expertise of the respective sphere of human activity);
- implementation of contemporary including interactive forms and methods of educational activity using them both on the lessons and in extracurricular activity;
- know the information and communication technologies required and sufficient for planning, implementation and assessment of the educational activity with infants and preschool children;
- have basic skills of working with text-processing programmes, spreadsheets, e-mail, browsers and multimedia facilities.

The objective of the paper consists in substantiation of conditions for the development of the information and communication expertise of a teacher in a preschool institution in light of modernization of the preschool educational system.

The academic novelty of the research is that there were revealed organization-pedagogical and psychological conditions required for the efficient management of the process of development of the information and communication competences of a teacher in a preschool educational organization in light of modernization of the preschool educational system [29].

Research hypothesis: on the stage of modernization of the preschool educational system, the management of the process of development of the information and communication competences of a teacher in a preschool educational organization will be efficient if:

- teachers have a mature motivational readiness to master the information and communication competences;
- diagnostic methods will be elaborated to determine the indicators of teachers' skill level in information and communication competences;
- a programme ensuring consistency of development of the information and communication competences of a teacher in a preschool educational organization will be developed;
- conditions were created for the practical introduction of information and communication technologies by teachers into the educational space of a preschool educational organization.

Determination and approbation of these conditions is instrumental in:

- development of the motivational and psychological readiness of a teacher in an educational organization for professional development in the area of information and communication technologies;
- creation of the optimum model for management of development of the information and communication expertise of a teacher;
- development of a special programme with due account for the initial level of competences; creation of a motivational system for teachers;
- technical equipment of work places;



- systemic nature of studies on certain subject-matter with the subsequent introduction of the knowledge obtained into practical activity;
- entering amendments in the system of methodological work;
- creation of the situation of success, demonstration of achievements.

Thus, the review of the available research and methodological literature and modern regulatory documents in the sphere of modernization of preschool education persuasively shows the necessity of introduction of the information and communication technologies into the educational process and professional activity of a teacher of a preschool educational organization [25-28]. Accordingly, the information and communication expertise of specialists working in a system of preschool education is moving to the foreground.

## Materials and Methods

The research activity was conducted on the basis of a Municipal Budgetary Preschool Educational Institution Nursery No. 277 of the urban district of Ufa city in the Republic of Bashkortostan and Municipal Budgetary Preschool Educational Institution Nursery No. 326 of the urban district of Ufa city in the Republic of Bashkortostan from November 2014 to April 2017.

25 teachers from the Municipal Budgetary Preschool Educational Institution Nursery No. 277 of the urban district of Ufa city in the Republic of Bashkortostan (experimental group) and 25 teachers from the Municipal Budgetary Preschool Educational Institution Nursery No. 326 of the urban district of Ufa city in the Republic of Bashkortostan (control group) as well as heads of the above mentioned institutions took part in a multiple-stage research.

The lead approach to the research of the problem was a pedagogical experiment consisting of the summative, formative and controlled stages.

Objective of the summative stage: to reveal the level of maturity of the information and communication competences of teachers. The following research methods were used on this stage:

- analysis of the psycho-pedagogical, methodological, regulatory and professional literature;
- questionnaire survey of teachers;
- interviewing;
- practical tasks;
- mathematical methods of processing of the research results;
- analysis, synthesis and generalization of results.

The objective of the formative stage of the research was to check the efficiency of work on management of the process of development of the information and communication expertise of a teacher in a preschool educational organization. On this stage a programme for the development of the information and communication competences of a teacher of a preschool educational organization was developed.

The research technique included 2 parts.

1. Theoretical part: theoretical course, discussion, answers to the questions, testing;
2. Practical part: independent work on the task, homework.

The tasks are classified in terms of the maturity level of the initial competences and are arranged successively.

The studies were conducted once a week with the teachers of the experimental group according to the plan, with the sub-group of teachers who had the first level of maturity in competences.

All practical skills were reinforced in independent activity in addition to the organized lessons. Lessons lasted 60 minutes.

On completion of each subject matter the testing was conducted in a form of a written assignment or test questions.

Alongside with the programme development we performed a job to create the motivation system to master the information and communication technologies and introduce into activity.

The financial incentive was realized by the administration of the preschool educational organization in form of a personal allowance to the teachers actively mastering and using the information and communication technologies from the payroll budget and from the fund of the activity yielding extra income. The mechanisms of non-financial motivation were also used.



There was also developed a model to manage the development of the information and communication expertise of teachers.

The innovative project “Electronic Didactic Games as a Means for Development of an Intellectual Potential of a Preschooler” was developed with the purpose of further introduction of the information and communication technologies into educational activity of a nursery. The primary goal of the project is to create conditions for the development of intellectual abilities in the process of independent design of electronic didactic games. The trainees had a possibility to master skills in the programme for presentations Power Point.

The activities were conducted to create and equip the developing objective-spatial environment. Teachers had at their disposal multimedia equipment including projection device, display screen, speakers, laptop computer; interactive board with a set of programmes, and laptop computers for use while formalizing the required documents, individual work with children, monitoring etc.

In the course of research activity we elaborated practical recommendations for teachers on creation of the information educational space in a preschool educational organization.

Objective of the controlled experiment: to check the efficiency of the elaborated model for management of development of the information and communication expertise of teachers.

In order to determine the efficiency of the work conducted we used the same diagnostic material as on the summative stage of the research activity.

On completion of studies teachers were offered to answer the questions of the same questionnaire as on the summative stage of the research activity.

Afterwards, the questionnaires of teachers were analyzed, and based on the answers conclusions were made about the level of maturity of the information and communication expertise of teachers on the controlled stage of the research activity.

Thus, we used the following complex of research methods: analysis of the psycho-pedagogical, methodological and professional literature on the problem under research, study of the pedagogical experience, analysis, synthesis, generalization, pedagogical observation, pedagogical experiment, sociological survey, conversation, interviewing and questionnaire survey of nursery teachers.

Within the frameworks of the research the questionnaire consisting of four sections was elaborated.

- 1 section. Knowledge of the basics of work with computer.
- 2 section. Ability to use office technologies to prepare various didactic and methodological materials.
- 3 section. Knowledge of the basics of work with the Internet.
- 3 section. Work with the information resources.
- 4 section. Motivational readiness.

The teachers were offered to specify the competences they have using the following answers:

- know;
- apply in practice on a regular basis;
- do not know, but willing to learn;
- do not know, not willing to learn;
- learn by myself.

The obtained research results enabled to analyze and make conclusions about the level of maturity of the information and communication expertise of teachers.

The reliability and accuracy of results was ensured by a sufficient amount of initial data, examples and calculations. While building a model of sampled population the method of quota sample was used. Among the quoted attributes the following were distinguished: age, level of the information and communication expertise, motivation to master and introduce the information and communication technologies in the professional and educational activity.

The respondents in experimental and control groups were divided into 2 groups: group 1 – teachers at the age of 20 – 40 and group 2 – teachers at the age of 40 and above.

Among those who participated in the research the fullness of quoted attributes in the experimental group was: 36% of teachers at the age of 20 – 40 and 64% of teachers at the age of 40 and above.

Among those who participated in the research the fullness of quoted attributes in the control group was: 40% of teachers at the age of 20 – 40 and 60% of teachers at the age of 40 and above.



## Results

As a result of the research conducted there were determined three levels of maturity of the information and communication expertise of teachers of a preschool educational organization.

1. The basic level of maturity of the information and communication expertise including:

- knowledge of the computer operation basics (operation basics with the operating system, creation of simple documents by means of the text processing programme, creation of simple presentations);
- knowledge of the Internet operation basics (e-mail, information search);
- knowledge of the information systems capabilities;
- ability to create simple didactic and methodological materials using office technologies;
- knowledge of basic principles of introduction of digital educational resources into the education process;
- positive motivation to obtain knowledge in the sphere of information and communication technologies.

2. General level of maturity of the information and communication expertise:

- ability to efficiently search information in different sources, including the global Internet, electronic editions;
  - critical view of the information found; selection of the information that can be trusted;
  - ability to select the methods of the information representation with due account for the capabilities of the hardware and software;
  - ability to install and remove applications and electronic educational resources;
  - ability to use office technologies to prepare various didactic and methodological materials;
  - ability to create and edit texts containing graphic elements, tables, schemes and formulas; to prepare various document templates in the word processor for the academic process;
  - ability to create computation tables using formulas and built-in functions, construct graphs and diagrams in a spreadsheet;
  - ability to create educationally efficient presentations (for the educational activity, speeches on a teachers' council and teacher-parent meeting, for presentation of proper educational experience etc.).
  - knowledge of the methods of creation of proper Internet-resources for academic purposes;
  - active participation in networking cooperation with parents and colleagues;
  - knowledge of methods of using the ICT in the project and research activity;
  - sustainable interest to ICT use in the educational process;
  - aspiration to obtain the required knowledge in the sphere of ICT independently.
3. Professional level of maturity of the information and communication expertise.
- ability to arrange an efficient personal information space and information space of pupils within the frameworks of the information space of the educational institution;
  - ability to create proper information resources for academic purposes using various software tools;
  - knowledge of methods to generalize the experience of efficient use of ICT in the educational activity;
  - ability to arrange an efficient information interaction in the global network with all participants of the educational process.

The analysis of results of the summative stage of research showed the lack of maturity of the required competences among 64.0% of teachers in the experimental group and among 35.0% of teachers in the control group. On this stage of research, teachers with professional level were not revealed in any of the presented groups. It is worth mentioning also that the low level of motivation to master and introduce the information and communication technologies is particularly noted among teachers with immature zero level of competences.

On the controlled stage of research the data was obtained testifying that 65.0% of teachers from the experimental group had a basic level of the information and communication expertise; 25.0% of teachers had a general level of the information and communication expertise and 10.0% of teachers had a professional level of the information and communication expertise (Fig. 1).





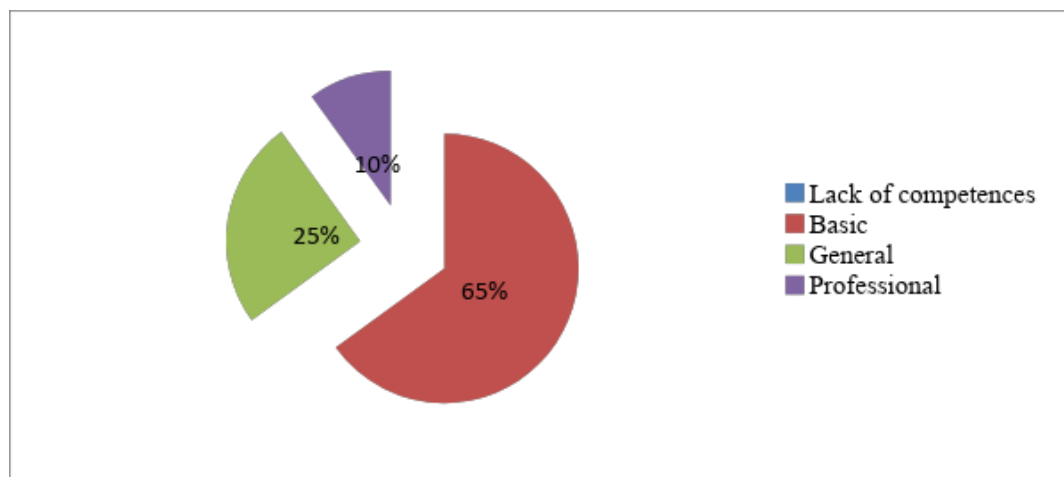


Fig. 1. The results of study of the maturity levels of the information and communication expertise among teachers from the experimental group

Fig. 2 shows comparative results of the levels of maturity of the information and communication competences of teachers from the experimental group on the summative and controlled stages of research testifying that the indicators of the basic, general and professional levels of the information and communication expertise of teachers grew significantly.

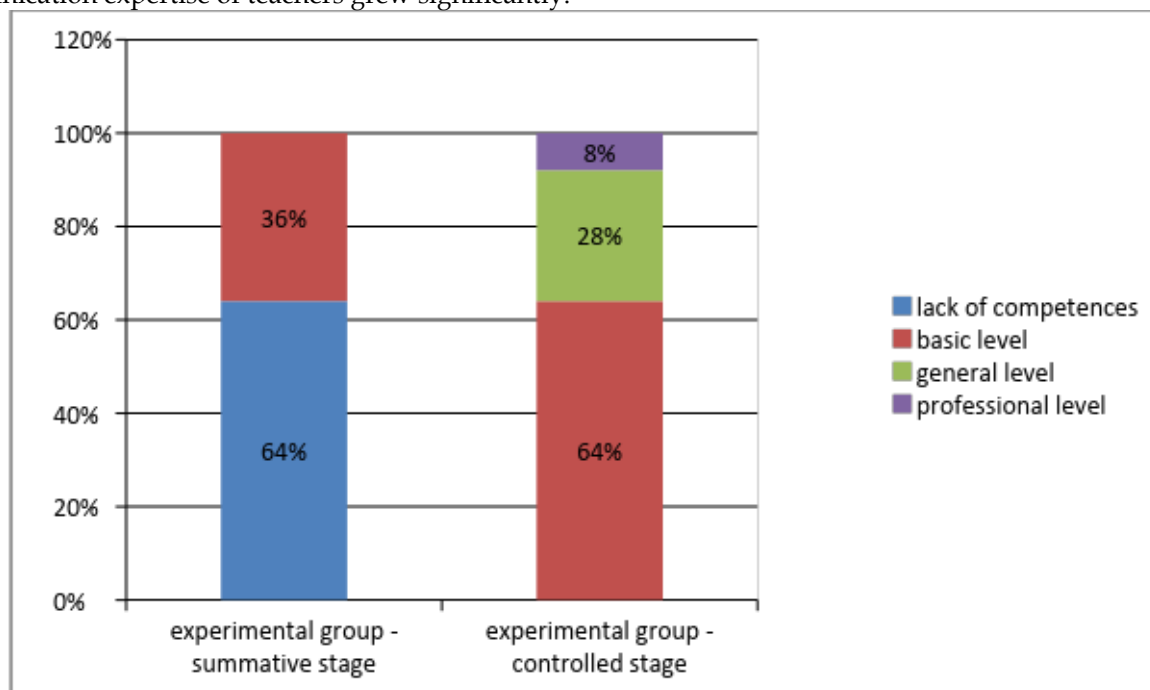


Fig. 2. The results of study of the maturity levels of the information and communication expertise among teachers from the experimental group on the summative and controlled stages of research

The results of the research data of the control group showed that 12.0% of teachers had a general level of the information and communication expertise; 60.0% of teachers from the controlled group had a basic level of competences; and 28.0% of teachers lacked such competence. Nobody from the control group had a professional level (Fig. 3).

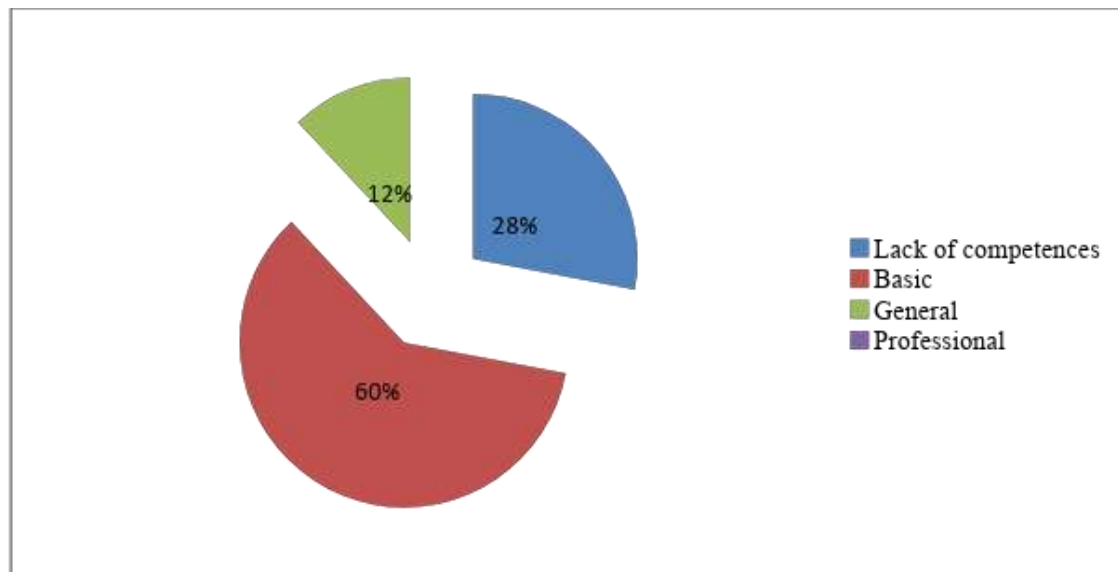


Fig. 3. The results of study of the maturity levels of the information and communication expertise among teachers from the control group

Fig. 4 shows comparative results of the maturity levels of the information and communication competences of teachers from the control group on the summative and controlled stages of research testifying that the indicators of the basic, general and professional levels of the information and communication expertise of teachers from this group did not undergo any significant change in terms of the competences development. Only a minimal shift is noted in the sphere of development of the information and communication competences among the small percent of teachers from the control group on the controlled stage of the research activity.

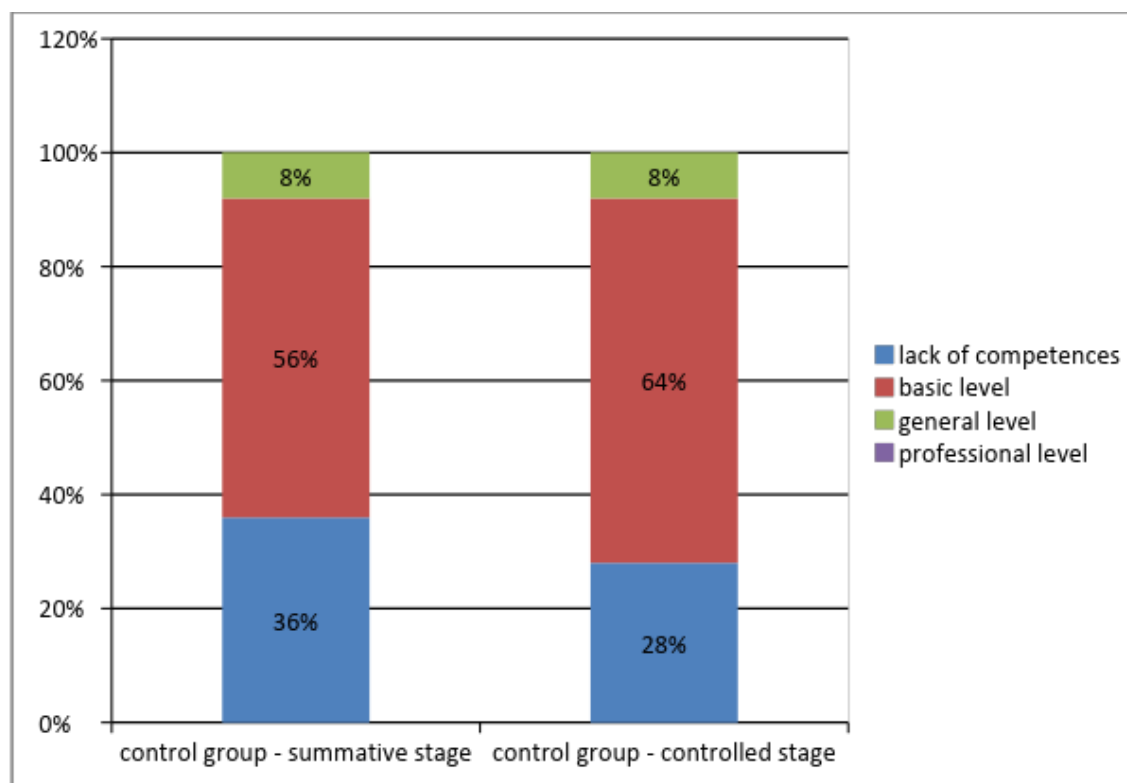


Fig. 4. The results of study of the maturity levels of the information and communication expertise among teachers from the control group on the summative and controlled stages of research of the teachers from the control group

Study of the motivation levels of teachers from the experimental and control groups to learn and introduce the information and communication technologies into the educational process and professional activity showed that there were significant changes in the motivation level of teachers from the experimental group.

There was registered positive motivation in the experimental group in 100% of cases among teachers at the age of 20-40 and in 86.0% of cases among teachers at the age above 40. There was registered positive motivation in the control group in 85.0% of cases among teachers at the age of 20-40 and in 50.0% of cases among teachers at the age above 40.

Sustainable interest to learn and introduce the information and communication technologies into the educational process and professional activity was revealed in 100% of cases among teachers at the age of 20-40 and in 68.0% of cases among teachers at the age above 40 (experimental group). In the control group there was noted a sustainable interest in 85.0% of cases among teachers at the age of 20-40 and in 50.0% of cases among teachers at the age above 40.

Aspiration for the independent study and introduction of the information and communication technologies into the educational process and professional activity was revealed in 65.0% of cases among teachers at the age of 20-40 (experimental group) and in 58.0% of cases among teachers at the age above 40. In the control group the aspiration for the independent study and introduction of the information and communication technologies into the educational process and professional activity was revealed in 53.0% of cases among teachers at the age of 20-40 and in 33.0% of cases among teachers at the age above 40.

Lack of interest to study and introduce the information and communication technologies into the educational process and professional activity was revealed in 25.0% of cases among teachers at the age of 20-40 (control group) and in 33.0% of cases among teachers at the age above 40.

The obtained data of analysis of the maturity level of the information and communication expertise and motivation level of teachers from the experimental group testify the efficiency of the developed model of management of the process of development of the information and communication competences of teachers in a preschool educational organization.

## Discussion

The results of the summative stage of the research activity showed that the maturity level of the information and communication expertise of the teachers from the experimental and control groups on the initial stage is fairly low.

Also the low level of motivation to master and introduce the information and communication technologies is noted on the initial stage among teachers at the age of 40 and above.

These initial data were laid as a basis of the programme "Development of the Information and Communication Expertise of a Teacher in a Preschool Educational Organization" and developed motivation system for teachers.

During the formative stage of the research activity there were provided the following required conditions facilitating the development of motivational and psychological readiness of a teacher of an educational organization for professional development in the area of information and communication technologies:

- creation of an optimum model for management of development of the information and communication expertise of a teacher;
- development of a special programme with due account for the initial level of competences;
- creation of the motivation system for teachers;
- technical equipment of work places;
- systemic nature of studies on certain subject-matter with the subsequent introduction of the knowledge obtained into practical activity;
- creation of conditions to master the knowledge obtained;
- entering amendments in the system of methodological work;



- creation of the situation of success, demonstration of achievements.

On the stage of the controlled experiment the results were obtained reflecting the growth of the maturity level of the information and communication competences and motivation among teachers from the experimental group, whereas the same indicators of the teachers from the control group practically did not change.

The modern information society sets a task for the educational institutions to train specialists capable of:

1) adjust flexibly to changing life situations obtaining the required knowledge on one's own, and applying them skillfully in practice to settle the diverse emerging problems in order to be able to find one's place throughout the whole life;

2) have independent critical thinking, ability to see the emerging problems in reality and search for rational solutions using modern technologies; be fully aware of where and how the knowledge obtained can be used in reality; be able to generate new ideas, and think in a creative manner;

3) to deal with the information skillfully (be able to collect facts required for settlement of a certain problem, analyze them, hypothesize a solution, make the required generalizations, comparisons with the similar or alternative solutions, establish statistical regularities, make reasoned conclusions, apply the conclusions obtained to reveal and settle new problems);

4) be communicative, easy to get on with in different social groups, be able to team up in various spheres.

The results of the research activity enabled to confirm the hypothesis: management of the process of development of information and communication competences of a teacher in a preschool educational organization is efficient if teachers have a mature motivational readiness to master the information and communication competences; diagnostic methods to determine the level of mastery of the competences were developed; conditions were created for practical introduction of information and communication technologies by teachers into the education space of a preschool educational organization.

## Conclusion

The developed model for management of the process of development of the information and communication expertise of teachers included a set of special measures facilitating introduction of the information and communication technologies into the educational process.

It includes documentation maintenance in electronic form, creation of a multimedia library with a selection of video plots, preparation of multimedia presentations for teacher-parent meetings and teachers' councils.

The following master classes were arranged during the research activity: "Development of Interactive Physical Activity Breaks," "Creation of Cartoons in Power Point Programme," "Development of Trivia Games on the Basis of Microsoft EXEL Spreadsheet," open displays of educational activity using laptop computers and interactive board, online conferences "Introduction of ICT into the System of Preschool Education," "Informational Expertise of a Teacher as One of the Lead Directions of Self-Development," "Game Computer Technologies."

The teaching personnel took an active part in the Internet contests where it placed. These are such contests as "A Teacher of the XXI Century," a contest of methodological elaborations the on artistic and aesthetic development, festival of innovative practices, "information and communication technologies in education" workshop and other.

At the same time there was specified a brand of the nursery "Interactive Childhood," and were developed and introduced into practice the methodological development "Computer Technologies as a Means of Development of Artistic and Creative Skills of a Preschool Child," innovative project "Electronic Didactic Games as a Method of Development of the Intellectual Potential of a Preschooler" and the programme of additional education on robotic technology on the basis of LEGO Education designer. At the same time the activities were performed to establish a single information and education environment of a preschool organization.

The developed and approved programme "The Development of the Information and Communication Expertise of a Teacher" and research materials can be used by methodological departments of the Republic,





city, district and specific educational organization.

The use of the information and communication technologies in the educational process of preschool educational organizations is an imperative of our time enabling to engage children into active work and arouse the aspiration to obtain knowledge.

The positive aspects of using the information and communication technologies are that in the process of work on computers memory and attention of children improve. Computer is indispensable in this case since it transfers information in a form attractive for a child which not only accelerates memorizing of the content but also makes it meaningful and long-term. Children's working on computer is important for motor development as well. In any games children should learn to press certain buttons with their fingers, which develops minor muscles of hands. Dealing with the electronic computing machines arouses vivid interest of children as a play activity first and academic afterwards.

However while working on computer the human body is subjected to certain loads characterized by mental, visual and physical strain.

Today the information and communication technologies, especially the Internet, become a centre of attraction for children thanks to accessibility and appeal especially in metropolitan cities turning into an essential element of socialization, and replacing traditional forms of social activity (walks and games outdoors, reading books etc.) by new ones, formed by modern technologies. The interest to this subject-matter is essentially associated with the problem of security of children in the virtual space, since the Internet is not only an area for development of children but also a risk area for their psychic and physical health and social well-being [26, 27].

The older the child, the more Internet resources he/she uses, therefore the higher the risk to encounter negative and hazardous information.

But active use of a computer in the academic and corrective process arouses concern of both parents and teachers regarding the impact on the health of children.

Being a public resource, the Internet represents an essential method of personal and professional communication and provides incredible opportunities for discoveries and creative activity. However, its use is associated with certain risks and malicious intents. It is an open Window to the world which belongs to adults as well and contains unsuitable materials for children. The major part of the materials available on the Internet is improper for the minors. In this regard, one should follow certain safety rules which are comparable to the driving regulations and shall be observed irrevocably.

And most importantly, one should remember: "A child learns what he/she sees at home!" For this very reason when children start dealing with the global Network the rest of the family members should be an example for him/her.

The information and communication technologies are necessary, but time of the Internet use should be limited and websites for children are required.

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