FORMATION OF THE LOGICAL-INFORMATIONAL CULTURE OF A PRESCHOOL TEACHER

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Abstract: The modern stage of development of society and education is characterized by the introduction of new information technologies and the active use of a dynamic information environment. In the conditions of changes in the information environment, the specialist's ability to perceive a significant amount of information, as well as comprehend, analyze and systematize information, transfer it to a new educational and professional situation, is of particular relevance. A modern specialist faces the need to use new information environments, the development of which becomes possible within the framework of an intuitive interface ideology. The modern development of the system of preschool education involves the active introduction of innovations in the educational and upbringing process of preschool educational institutions, which affects the efficiency of its activities. In this case, the innovation processes in the framework of preschool education are an instrument for creating and developing a competitive educational environment aimed at developing the personality of the child.

Keywords: preschool education, preschool teacher, skills, information culture, modernization.

1 Introduction

The main contradiction of the modern education system is considered by scientists as a contradiction between the rapid growth rate of knowledge in the modern world and the limited possibilities of their assimilation by the individual. At the stage of the formation of the information society in the conditions of the "information explosion" and changes in the information environment, not only the ability to perceive a certain amount of information but also the ability to comprehend, systematize and transform the gained knowledge into a new learning situation, logical skills. The increase in the volume and efficiency of the use of information is achieved through the classification, abstraction, and coding with a combination of intuitive-logical and formal-logical human activity. All this underlines the importance of the problem of forming logical skills, the special relevance of which is connected with the preparation of preschool teachers.

In addition to that, the analysis of psychological and pedagogical literature shows that, although as a result of numerous studies of the problem of the formation of various skills, a great positive experience has been gained, they do not give an answer to the question of the formation of logical skills among preschool teachers, as well as the pedagogical conditions of their formation in the modern information environment.

A necessary condition for the qualitative renewal of society is the multiplication of its intellectual potential. The intellectual level of an individual is characterized in general by two main parameters: the volume of acquired information and the ability to use this information to solve various problem situations arising in the course of activity. The first of these parameters characterizes the erudition of a person, the second is his/her information development. The basic skills of a person include such skills as the ability to analyze, compare, summarize, substantiate and prove judgments, to formulate clear definitions. These skills develop logical intuition, briefly and clearly reveal the mechanism of logical constructions and teach their application. (1-2)

The connection of pedagogical activity and logical skills specific to the present stage can be traced in the qualification requirements for preschool teachers. First, pedagogical activity is based on logical abilities to operate information, secondly, it is aimed at creating a logical base for active use by pre-schoolers of the possibilities of the modern information environment. Thus, the relevance of considering the formation of logical skills of future preschool teachers is emphasized both from the standpoint of formal logic and the logic of algorithmized information environment, and its impact on the child.

The problem of forming the logical skills of preschool teachers was not the subject of special research by scholars and practitioners. This is due to the insufficient development of the theoretical and methodological foundations of the formation of the logical skills of the teacher and the corresponding technology of this process, as well as the specifics of the pedagogical activities of preschool teachers. (3)

A future teacher turns out to be professionally prepared for scientific and experimental work if he has logical skills, means, methods and techniques for solving pedagogical research and analytical tasks, the types and characteristics of which may change in the course of further work. In this regard, the process of preparing the future preschool teacher should be adjusted on the basis of feedback, ensuring the formation of his necessary logical knowledge and skills in accordance with the actual needs of pedagogical science and practice at the present stage.

2 Materials and Methods

The modern development of the system of preschool education involves the active introduction of innovations in the educational and upbringing process of preschool educational institutions, which affects the efficiency of its activities. In this case, the innovation processes in the framework of preschool education are an instrument for creating and developing a competitive educational environment aimed at developing the personality of the child.

In educational practice, in order to create favorable conditions for the development of children, not only the content is important, but also the technology of training and education. One of these innovative resources is information and communication technology (ICT), which contributes to the availability, variety of learning, increased activity and mobility of preschool children.

One of the main conditions for the use of ICT in the preschool educational process is that teachers should work with children who know the technical capabilities of a computer, know how to work with it, clearly follow sanitary standards and rules for using computers in preschool institutions, are well-versed in computer programs developed especially for preschoolers, who know the ethical rules of their application and know how to introduce children to new technologies. In addition, teachers should be well aware of the age-related anatomical, physiological and psychological characteristics of young children and the specifics of the diagnosis of educational activities in a preschool educational institution. Creative teachers, striving to keep up with the times, need to study the possibilities of using and introducing ICT into their practical activities, be a conductor for the child to the world of technologies, form the basis of information culture. (4-5)

The ICT competence of a teacher is understood as his willingness and ability to independently use modern information and communication technologies in pedagogical activity to solve a wide range of educational tasks and design ways to improve their skills in this area.

Improving the ICT competence of the teacher allows to intensify and facilitate his work, there is an opportunity for the development and self-development of the teacher, improving his educational and methodological activities.

For teachers, information and communication technologies have the following possibilities for using them in the educational process:

1. Stimulating interest in children's educational activities.
2. Continuous professional development of teachers.
3. Perception and creative implementation of existing non-standard approaches in education.
4. Increase the choice of means, forms, and pace of studying topics.
5. The use of free educational resources and heuristic programs of information and educational space.

Nowadays, only a few teachers of preschool institutions who have received special training use ICT in preschool education. This problem is being actively solved at all levels of education.

Consequently, professional qualification is an integral education, which includes experience, motivation, personal qualities, and other professional characteristics. It directly affects the quality and performance of the employee's activities, ensures readiness and ability to perform various professional tasks.

Qualification categories imply, first of all, differentiation of the level of complexity and quality of solving professional (functional) tasks facing the employee. Each teacher to confirm or improve their professional qualifications should be able to use modern technical means.

The main psychological and pedagogical conditions for solving this problem were identified. The system of work on the formation of ICT competence among teachers should be aimed at acquiring a new means of professional activity, that is, at mastering tools, techniques, methods and technologies that are significant for the pedagogical activity. Educators should be given opportunities to improve their skills and professional competence. To stimulate the increase of teachers' motivation for self-knowledge, building up their personal, general cultural and professional potential. Teacher training should be based on vigorous activity and a differentiated approach (work experience, basic education, age, etc.). Creating a situation of psychological satisfaction of teachers from the use of ICT in pedagogical activities and at the expense of the real needs of the pupils in these facilities. (6)

Educational activities using ICT allow for the integration of audiovisual information presented in various forms (video, animation, slideshow, music, etc.), stimulates children's involuntary attention due to the possibility of demonstrating objects and phenomena in dynamics. Possession of ICT teachers can increase the flow of information on the content and methods of working with children in direct educational activities, and also reduces the time required to prepare for it. (7)

Teachers should remember that the most important component of preschool education is the activity of the students. Different types of direct educational activities can complement each other, and they must change at all stages of the child's development. Thus, at the age of five years, the basis for such upbringing should be the learning nature of gaming activities using ICT. Inquisitive, emotional preschoolers can learn from the game on the computer. Children remember and reproduce only what is connected with their interests, therefore such an activity should be specific, concise and understandable. Mastering information should be based on the experience of the child.

Information and communication technologies as a phenomenon of modern education allow the modern teacher to modernize the teaching and educational process and have the quality advantage of an educator over colleagues who operate only within the framework of traditional technologies.

Thus, the formation of ICT competence among preschool teachers helps to feel comfortable in the new socio-economic conditions, and for an educational institution to switch to the mode of functioning and development as an open educational system.

In the professional activity of a teacher, the ability and desire to find new information, facts, materials, to use them in practice is important. This is especially true today when the timeframe for updating information is rapidly reduced, while its volume increases. The information society requires the emergence of a new type of education, in which study becomes an essential attribute of a person's entire life. Today, in order to become (and remain) a specialist, it is necessary to constantly assimilate new knowledge, not limited to those that were once acquired in an educational institution. The combination of qualities that allow to carry out this activity effectively indicates a high level of information culture.

The information culture is understood as the ability to work purposefully with information (search, selection, creation), use it for receiving, processing and transmitting information tools and information technologies. Information culture should be considered as a complex system of education, reflecting the integration of knowledge about man and the culture of mankind.

Information culture of the teacher includes the following characteristics:

1. In the intellectual sphere:

▪ thinking (ability to analyze information resources and identify their capabilities in solving the tasks of pedagogical activity, to show creativity, flexibility, criticality, systematic, mobility and quick thinking in situations of searching, transforming and transforming the necessary information);
▪ knowledge of information technology.

2. In the motivational sphere:

▪ the motivation for the development of information culture (the desire to master modern information technologies, the desire to learn best practices in the field of informatization of education, focus on achieving a high level of information culture).

3. In the volitional sphere:

▪ purposeful actions in the information environment (volitional resolution of contradictions, the ability to perform activities at the optimal level of activity, mental stability in relation to difficulties);
▪ patience and self-control in situations of information retrieval, its processing for educational purposes;
▪ perseverance in mastering new information technologies.

4. In the emotional sphere:

▪ the ability to understand one's own emotional states in situations of searching and processing information (focusing on the ways and means of obtaining information);
▪ the ability to adequately experience the lack of results, technical and other obstacles when working in the information environment;
▪ the ability to adequately assess their own achievements in the use of information technology, their level of information culture.

5. In the subject-practical field:

▪ the ability to reproduce and develop new knowledge, types, forms of activity in the information environment;
▪ readiness for collective activities using information technology;
▪ possession of operational skills (ability to work with software, make decisions, select the necessary information, generate ideas);
▪ possession of information processing skills;
▪ the ability to use information tools and technologies;
▪ the ability to navigate the information environment. (8-10)

In the conditions of informatization of education, the general complex of professionally important qualities necessary for the

success of a professional activity is complemented by specific qualities that characterize the level of information culture of the teacher. O.V. Krasnova (11) refers to them the following:

1. Aspiration:

▪ interest in modern methods of information exchange and the search for all new ways to intensify the educational process on an informational basis;
▪ the need for constant updating of knowledge about the possibilities of using information technologies in the professional and general cultural environment;
▪ professional mobility and adaptability in the information society.

2. Personal qualities:

▪ responsibility when working with technical equipment, a combination of personal freedom and responsibility for the information security of society and the individual;
▪ consistency in the formulation and sequential solution of pedagogical problems using information technology tools;
▪ confidence in the correctness of non-standard decisions.

3. Position:

▪ attitude to information, objects, and phenomena in a rapidly changing information environment, critical attitude to information consumption;
▪ style of pedagogical communication and interaction with people within the information environment, self-assessment, and reflection at the level of informational contacts;
▪ statement of morality and tolerance in computer communication.

The level of formation of the information culture of a teacher can be determined by the following set of criteria indicators:

1. The state of information identity of the teacher (general cultural and professional erudition; understanding and acceptance of the values of information activities; reflectivity of the professional position; use of information educational resources for self-education; consistency of real activities with values).
2. The development of information technology skills (the use of information technology in solving actual pedagogical problems; the availability of a flexible system of skills; participation in providing information interaction in an educational institution).
3. Creative activity and independence (participation in project activities, the creation of own information products; the presence of the author's position (methodology); the ability to make choices and attract the necessary information resources).
4. Emotional attitude to information activities (positive professional self-assessment; interest in information activities; satisfaction with the results of their own information and educational activities).
5. Success and effectiveness of information and educational activities (availability of achievements in the field of information and educational activities; recognition by the professional community; participation in joint projects with other specialists).

Information culture (IC) of the teacher is an integral part of the basic culture of the individual. In the context of the problem we are studying, the information culture of a teacher is defined by us as a system characteristic of a person, which allows him to effectively participate in all types of work with information such as receiving, accumulating, coding and processing, creating on this basis qualitatively new information and its transmission, practical use. In the conditions of the information society with the transition to the qualitatively new technologies of working with information, wide prospects are opening up to meet the information needs and requests of the individual, the requirements for the level of its information culture are significantly increased, the tasks of its formation are being updated. It is no longer enough for a specialist to possess multidimensional knowledge about information processes and to be able to apply them at a high professional level within the framework of their activities.

The information culture of a teacher in the framework of its formation and development in the system of additional education should be considered structurally at the following levels: conative-targeted (availability of motivation to achieve the goal, need and interest in obtaining knowledge and skills in the field of hardware, software, and information); cognitive (the presence of a set of social, natural and technical knowledge, reflecting the system of the modern information society, as well as knowledge, which constitute the informative basis of search cognitive activity); operational activity (activity on receipt, accumulation, coding and processing, creation on this basis of qualitatively new information, its transfer and practical use; estimated and reflexive (experience of searching activity in the field of software and technical resources, ensuring readiness for the search for the solution of the professional problems presented). Technological and didactic components of the information culture of the teacher are realized through the following functions: cognitive (it promotes the systematization of knowledge, perception, and self-knowledge by the specialist himself); communicative (allows for multidirectional exchange of information); adaptive (allows you to adapt to the conditions of life and activities in the information society); regulatory (implemented through following the system of moral and legal norms and requirements in the information society); evaluative (implies the ability to navigate information flows, identify and select known and new, evaluate relevant and secondary information); interactive (aimed at active independent and creative work of the subject of educational activity, leading to self-development, self-realization). (12-13)

It is proved that management informatization allows you to create an information and educational environment, which includes technical, software, telecommunications tools that provide access to information for children, teachers, parents, as well as create conditions for personality-oriented interaction of all participants of educational relationships. The unified informational and educational environment provides support for the educational process and automation of management activities, ensures an increase in the quality of education and the level of interaction of all participants in educational relations. The solution of the problem of informatization of education is possible within the framework of the formation of an information culture for all participants of educational relations. (14)

Currently, a new approach to personnel management has been announced; this is the management of the competence of the teaching staff, which includes comparing the needs of the institution with the available human resources and selecting the goals, content, forms, and means of activating the staff in accordance with the needs of the institution. (15) At present, there is a need for personnel able to navigate the information environment, able to communicate using information tools and technologies, and able to relate their activities, their level of information culture with social and professional experience.

Unfortunately, preschool educational institutions, teachers have found themselves in some isolation from the modern world of information technology. As the practice of management shows, the analysis of periodicals, heads of preschool institutions have serious difficulties associated with the introduction of information educational technologies in educational and management processes.

3 Results and Discussion

In the context of the modernization of the preschool education system, the introduction of the state educational standard for preschool education, there is a need to search for new modern technologies, including information technologies, to achieve qualitatively new educational results for the development of preschool children. (16)

Thus, there is a contradiction between the growing public demand for the quality of preschool education and the insufficiently effective organization of the informatization process in the preschool institution.

We highlight the following reasons for the poor organization of this process:

- low level of information culture of participants of educational relations in preschool institutions implementing the basic general educational program of preschool education;
- low level of motivation of teachers to use information resources in their professional activities;
- the presence of psychological fear of the computer, especially among older teachers;
- the lack of programs for the retraining of teachers. Traditional advanced training courses for teachers are aimed at the formation of computer literacy and do not orient teachers to the use of IT in their practical professional activities;
- lack of tools for determining the state of informatization of preschool institutions and self-analysis of the informatization of their professional activities;
- lack of computer programs designed for automated work.

In identifying the requirements for the implementation of pedagogical conditions for the formation of logical skills of future preschool teachers in the modern information environment, we considered the specific nature of logical skills, their relationship with the teacher's professional skills and the specificity of the information environment development from the standpoint of subjects of information interaction.

Solving the problem of considering the specifics of the formation of logical skills in the modern information environment, we proceeded from the fact that the process of the formation of logical skills is based on the inclusion of the teacher in various activities in conjunction with multidimensional computer training. The greatest attention should be focused on the strength of assimilation of the proposed information, therefore the situations for using the material should be problematic, based on the teachers' personal experience. (17-18)

The following requirements for the implementation of pedagogical conditions are substantiated:

1. A complex combination of professional and educational activities of the future teacher in the logic of the intuitive interface of the information environment, which implies the integrated use of computer technology based on the logic of the information algorithm.
2. Inclusion of active teaching methods in the process of formation of logical skills, which implies the use of various types of learning situations, considering the peculiarities of information interaction of the subjects of the future preschool teacher preparation process and considering the age characteristics of children.
3. The use of a system of formal logical exercises containing professionally significant educational material, which ensures the consistent formation of logical skills from individual logical skills to logical procedures. (19-20)

4 Conclusion

The study of the real state of the problem of the formation of the logical skills of preschool teachers in the modern information environment in the theory and practice of education revealed a number of unresolved issues. The educational process of preparing preschool teachers for professional pedagogical activity does not include preparation for the formation of logical skills among younger students, which, according to many scholars, is the basis for their intellectual development. A significant part of preschool teachers with different pedagogical experience is at a low level of preparedness for this type of activity. The need to solve this problem led to the study of

pedagogical conditions conducive to the formation of the logical skills of future primary school teachers. The relevance of the study of the formation of the logical skills of future primary school teachers in the modern information environment is determined by the needs of the educational process at the present stage, its focus on the need to train a specialist working in an information society under construction, and insufficiently developed research problems in educational science.

At the present time, in the period of informatization of education, it is important for students to develop the skills not only to independently replenish knowledge but also to orient themselves in the rapid flow of information. At the same time, it is important for students to be able to isolate the necessary information from the entire flow, to cut off the destructive information.

In the modern information environment, the most important logical skills for a teacher are the skills of analyzing a specific learning situation.

The logical skills of the future preschool teacher in the modern information environment, on the one hand, are connected with the activity of processing pedagogical information, on the other hand, all of the school skills are based on them. The content of logical skills lies in the set of logical operations and procedures included in the teacher's professional skills, with various types of interrelations necessary for the formation of professional skills. (21)

Modern information environment gives a person great opportunities for creativity. However, their use requires the formation of logical skills. The formation of logical skills is influenced by the features of the information environment, which are significant for the leading actors in the process of preparing a future preschool teacher, including a teacher and children.

The formation of logical skills of preschool teachers in the modern information environment occurs sequentially from disparate logical operations to logical procedures and is ensured by the optimal combination of intuitive-logical and formal-logical activities of future teachers.

Pedagogical conditions have a scientific and theoretical significance and can find the practical application at all stages of vocational training of preschool teachers.

The process of formation of logical skills is traced only in the study of computer science, the issues of developing programs and teaching and methodological support of the processes of formation of logical skills of students and preschool teachers in the modern information environment in various disciplines of professional education remain relevant.

Literature:

1. Usova SN. Formirovaniye gotovnosti k professionalnoy tvorcheskoy samorealizatsii budushchego uchitelya [Formation of readiness for professional creative self-realization of the future teacher] [dissertation]. [Kazan]; 2002.
2. Talmanova TM. Formirovaniye issledovatelskoy kompetentsii uchitelya v sisteme nepreryvnogo obrazovaniya [Formation of the research competence of the teacher in the system of continuous education] [dissertation]. [Moscow]; 2003.
3. Abramyan GV. Teoreticheskiye osnovy professionalnogo stanovleniya pedagoga v informatsionnoy srede [Theoretical foundations of professional development of a teacher in the information environment] [dissertation]. [Saint Petersburg]; 2001.
4. Katz LG. Developmental Stages of Preschool Teachers. The Elementary School J. 1971 Oct; 1: 50-54.
5. Gazizova AI. Metod komponentnogo analiza kak sposob osushchestvleniya kontrolya urovnya sformirovannosti umeniy [Component analysis method as a way to control the level of skills]. Kazan: KGU; 2003.
6. Galkina YeA. Sistema kvalimetricheskikh izmereniy effektivnosti pedagogicheskikh innovatsiy [The system of qualimetric measurements of the effectiveness of pedagogical

innovations]. Metodologiya i metodika nauchnykh issledovaniy. 2000; 2:174-6.

7. Danilchuk YeV. Informatsionnyye tekhnologii v obrazovanii [Information technology in education]. Volgograd; 2002.

8. Zeyer EF. Psikhologiya lichnostno-oriyentirovannogo professionalnogo obrazovaniya [Psychology of student-centered vocational education]. Ekaterinburg: Izdatelstvo Uralskogo prof-pedagogicheskogo universiteta; 2000.

9. Rubin KH, Clark ML. Preschool teachers' ratings of behavioral problems: Observational, sociometric, and social-cognitive correlates. J Abnorm Child Psychol. 1983; 11(2):273-85.

10. Kiselev NN. Informatsionnaya potrebnost kak faktor sotsializatsii lichnosti [Information need as a factor in the socialization of the individual] [dissertation]. [Kemerovo]; 1998.

11. Krasnova OV. Razvitiye informatsionnoy kultury lichnosti kak kompleksnaya professionalno-pedagogicheskaya problema [Development of personal information culture as a complex professional and pedagogical problem]. Moscow: OIM.RU; 2000-2001.

12. Bogush AM. Predshkolnoye obrazovaniye: realii i perspektivy [Preschool education: realities and prospects]. Saint Petersburg; 2017:61-71.

13. Guo Y, Justice LM, Sawyer B, Tompkins V. Exploring factors related to preschool teachers' self-efficacy. Teaching and Teacher Ed. 2011; 27(5):961-8.

14. Kowalski K, Pretti-Frontczak K, Johnson L. Preschool Teachers' Beliefs Concerning the Importance of Various Developmental Skills and Abilities. J of Res in Childhood Ed. 2011; 16(1):5-14.

15. Pajares MF. 1992. Teachers' beliefs and educational research: Cleaning up a messy construct. Review of Ed Res. 1992; 62(3):307-32.

16. McMullen MB, Elicker J, Goetze G, Huang H-H, Lee S-M, Mathers C, Wen X, Yang H. Using Collaborative Assessment to Examine the Relationship between Self-Reported Beliefs and the Documentable Practices of Preschool Teachers. Early Childhood Ed J. 2006; 34(1):81-91.

17. Hsieh W-Y, Hemmeter ML, McCollum JA, Ostrosky MM. Using coaching to increase preschool teachers' use of emergent literacy teaching strategies. Early Childhood Research Quarterly. 2009; 24(3):229-47.

18. Gendina NI. Kontseptsiya formirovaniya informatsionnoy kultury lichnosti: opyt razrabotki i realizatsii [The Concept of Forming an Information Culture of a Person: Experience in the Development and Implementation]. Otkrytoye obrazovaniye. 2005; 6:74–82.

19. Gershunskiy BS. Filosofiya obrazovaniya dlya XXI veka (v poiskakh praktiko-oriyentirovannykh obrazovatelnykh kontseptsiy) [Philosophy of Education for the 21st Century (in search of practice-oriented educational concepts)]. Moscow: Sovershenstvo; 1998.

20. Karakozov SD, Nasyrova NKh. Informatsionnaya kultura v kontekste obshchey teorii kultury lichnosti [Information culture in the context of the general theory of personal culture]. Pedagogicheskaya informatika. 2000; 2:41–54.

21. Khutorskoy AV. Klyuchevyye kompetentsii kak komponent lichnostno-oriyentirovannoy paradigmy obrazovaniya. Narodnoye obrazovaniye [Key competencies as a component of the personality-oriented educational paradigm]. 2003; 2:58–64.

Primary Paper Section: A

Secondary Paper Section: AM, AN