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DIGITAL EDUCATIONAL ENVIRONMENT: NEW OPPORTUNITIES FOR TEACHERS OF ADDITIONAL PROFESSIONAL EDUCATION

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Abstract

The 21st century marks a new era - the era of digitalization, therefore Russia is implementing the "Strategy for the Development of the Information Society in the Russian Federation for 2017 - 2030", which aims to create opportunities for people of different ages to receive quality education using modern information technologies. Teachers of preschool education should have the competencies demanded by the 21st century society in the digital learning environment: information activity and media literacy, the ability to lifelong education, communication skills and professional mobility; effective performance of professional activities. The exceptional role of the system of additional professional education (hereinafter referred to as APE) is noted in the implementation of continuing education of teachers of preschool education. The activities of institutions of additional education in many respects depend on the ability of the teaching staff to possess information, quickly analyze and process it, and also bring it to the end consumer - the student. Studies conducted in Russia and abroad show that the teaching staff of institutions of additional education will allow the use of a wide range of modern information technologies, which requires a rethinking of the educational process in terms of changing its organization, and the development of and implementation of a new approach to building a modern APE system becomes a priority.

Keywords: Digital educational environment, educational process, information and communication competencies, teaching staff

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1. Introduction

Humanity of the 21st century lives in an era of limitless possibilities. At present, educational institutions that want to be competitive in the global market must meet the global challenges of the time. The international initiative group Global Education Futures notes such challenges in their work: the global use of information and communication technologies (hereinafter referred to as ICT); increasing the value of human capital; the rapidly aging nature of knowledge, skills and competencies in the professional field (Villar & Celdran, 2013). The importance of personal and professional development of a person and the insufficient development of conceptual and technological support for this process is noted today both in universities (Kirkwood & Price, 2014), and in the APE system. The response of the education sector to these challenges was the emergence of a new concept of universal digitalization, which caused a social order for the training of a professional teacher of preschool education. The growing need for qualified personnel in the system of preschool education has touched the organization of the educational process in institutions of vocational education. Currently, information technologies are actively being introduced into the educational process of institutions of vocational education, computer training programs, testing, modeling, and presentations are used (Koswin, 2018). Modern ICTs provide teachers with technical and technological support and provide an opportunity to devote more time to live communication with students.

2. Problem Statement

In modern conditions, the APE system is not able to effectively respond to the requirements of the time, due to:

- slow changes in the APE in response to requests from society and consumers, due to the inertia inherent in this system and the need to increase its effectiveness;
- insufficient technological base in a digital educational environment (hereinafter referred to as DEE);
- the importance of personal and professional development of teachers of the APE system and the insufficient use of ICT.

The main problem of the study is to find the answer to the question, what are the theoretical, methodological and empirical foundations for the formation of information competence of the teaching staff of institutions of vocational education in the conditions of a specially created DEE of institution for the purpose of their effective search, analysis, transfer and use of professionally significant information for the training of preschool teachers.

3. Research Questions

The use of ICT in institutions of the continuing education system is an important aspect in the educational process, since it performs significant functions related to training: personal and professional development, proactive education in connection with the continuously accelerating pace of obtaining the latest professional knowledge. At the same time, a number of questions arise during the study:

3.1. How does digital education affect the development of the continuing education system?

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3.2. What is the level of ICT competence among teachers of institutions of additional education in the digital age?

3.3. How does ICT competence of teachers at institutions of continuing education affect the improvement of the quality of education?

4. Purpose of the Study

The main objective of the study is a theoretical analysis and experimental work on the basis of which the essence, content and structure of the formation of information competence of the teaching staff of institutions of vocational education will be revealed and ways to increase its effectiveness in the conditions of DEE will be substantiated.

5. Research Methods

The methodological basis of the research is the following: the environmental approach that allows exploring the environment of the institution and present it in the form of educational opportunities for the formation of informational competence of the teaching staff; the competency-based approach determining (Maltseva et al., 2015) that the result of the implementation of the educational program is new competencies and a willingness to professional activity in the information society; activity approach, due to which knowledge acquires value only when it is included in educational activity. The study used theoretical, empirical and statistical methods of processing the obtained data.

6. Findings

Changes in education in recent decades are inextricably linked with the processes taking place in the world community, and the Russian Federation is no exception. We will try to analyze the modernization processes taking place in modern Russian society and impose qualitatively new requirements on the APE system, which initiate the search for effective educational technologies that facilitate information and pedagogical interaction, and require the improvement of the information and communication competencies of the teaching staff (Sergeeva et.al., 2019a). Domestic scholars believe that the teaching staff, being ready to solve problems in the context of the traditional educational process, is not adequately prepared for the successful use of modern ICT in their professional activities, despite the network information and communication technologies at their disposal (Sergeeva et.al., 2019b). DEE is organized to improve the quality of vocational training of preschool teachers using different forms:

- transfer of existing training materials in an electronic environment;
- formation of the DEE interaction of the teacher and students (Lebedeva, 2017);
- creation of the latest types of training tools;
- creation of fundamentally new forms of learning.

The process of digitalization of education has two sides: the formation of a DEE as a combination of digital educational tools, online courses, and electronic educational resources (Baran, 2014); the

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modernization of the educational process designed to provide training for a preschool teacher in a digital society and professional activities in pre-school education. Thus, DEE acts as a modification of the educational process and its components, on the one hand, and digital technologies and tools used in the educational process, on the other hand, the maximum use of the didactic capabilities of digital technologies; adapting them to the effective solution of pedagogical tasks (Kostylev et al., 2017).

As a rule, three different ICT groups are used in the digital educational process of additional professional education: multipurpose ICTs (PowerPoint, HotPotatoesQuizizz, Skype, etc.); modern pedagogical technologies involving the use of ICT; production technologies (Kumar, & Sharma, 2016), ensuring the formation of the necessary professional competencies among preschool teachers. The main task of teachers of institutions of vocational education is the development of the latest technologies that make the educational process effective.

The authors of the article conducted a study on the basis of the St. Petersburg Academy of Postgraduate Pedagogical Education (hereinafter referred to as SPb APPE); determining the frequency and effectiveness of using ICTs to improve the quality of training. The data obtained showed that the teachers of St. Petersburg APPE do not fully own ICTs, for example, the resources in the MOODLE system are most often used as a file storage for downloading (Bulaeva et al., 2018).

Let us single out the advantages of DEE determined by scientists: distance education, which fully or partially replaces traditional education; globalization of education, facilitating the exchange of theoretical and practical experience between teachers of different countries, which creates the conditions for improving the quality of research and teaching; virtualization of space and time of education (Kashtanova et al., 2017); optimization of the educational process, with a minimum expenditure of funds, time and effort to achieve maximum results (Sergeeva et.al., 2019a).

The results of the study allowed us to highlight a number of advantages of the DEE created in SPb APPE: a clear construction system (planning, implementation and control); providing access to the library of the academy (Internet resources, textbooks, collections of media resources); providing the opportunity to train students on an individual route. A set of ICT tools has been created in the DEE, the use of which is systematic and contributes to the training of preschool teachers in accordance with the requirements of the federal state educational standard for preschool education (Zadvornaya, 2019). Thus, the use of ICT in the training of students can become one of the relevant and promising areas of updating the entire system of additional education.

The authors of the article conducted a survey of 100 teachers aged 35 to 52 years and 250 students in order to identify the attitude of the teaching staff of SPB APPE to ICT, the level of competence and frequency of use. The teachers participating in the questionnaire consider ICT an integral part of their professional life, the questionnaire survey allowed us to identify motives that encourage teachers to develop their professionalism: 55.3% of respondents note increased requirements for the level of professional training of the teaching staff, 46.8% - mastery of new knowledge, 42.9% - need for self-improvement.

Teachers believe that many areas of professional and research activity are impossible without computer and Internet technologies in modern conditions, starting from the search for the necessary information to the implementation of communication in a professional environment. In his works, M. Castell's noted that in modern conditions to possess knowledge means to be able to quickly navigate in the

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stream of the latest information, freely searching the necessary information in the repository of knowledge (Kastel's, 2000).

According to the results of a survey conducted over three years, teachers rated themselves as novice users (Figure 01), in 2017-2018. 8% of respondents used educational software, in 2018-2019 - 35%, and in 2019-2020. - 50%. At the same time, the demand for mastering the methods of creating and conducting webinars, recording and editing videos, creating educational content for distance learning courses has increased.

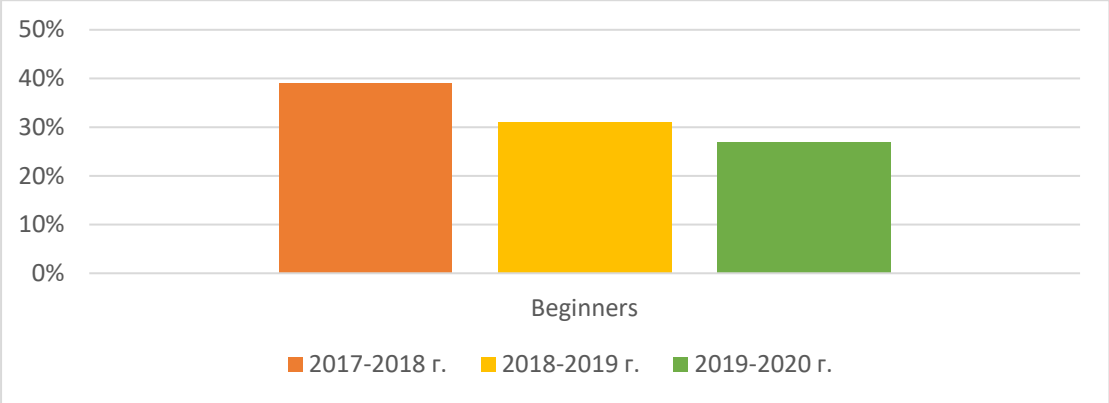

Figure 1. Levels of computer skills by teachers of St. Petersburg APPE

We obtained data that only 50% of teachers have pedagogical techniques for organizing students' activities using ICT and digital resources, only 5% of respondents use "cloud" technologies in their professional activities, therefore, the issues of introducing digital technologies into the educational process and, in particular, mastering algorithms cloud services applications have been identified by us as the most relevant and promising for further study.

Almost every second respondent over the age of 50 defines the possession of ICT as the most difficult, and 70% of the academic staff of the Academy is older than 50 years of age. Only 25% of teachers working in St. Petersburg APPE have their own Web site and maintain it up to date, about 10% have their own site, but do not attach much importance to it. Studies by foreign scientists confirm that the younger the respondents, the less often they consider ICT a problem (Jordan, 2014).

We conducted a survey of students about the use of ICT by teachers in their lectures: 14% of respondents said that teachers use ICT almost always, and only 7% in each group; 65% of students indicated that teachers used multimedia teaching aids; 34% - computer technology; 1% - direct use of Internet resources in the learning process (Figure 02).

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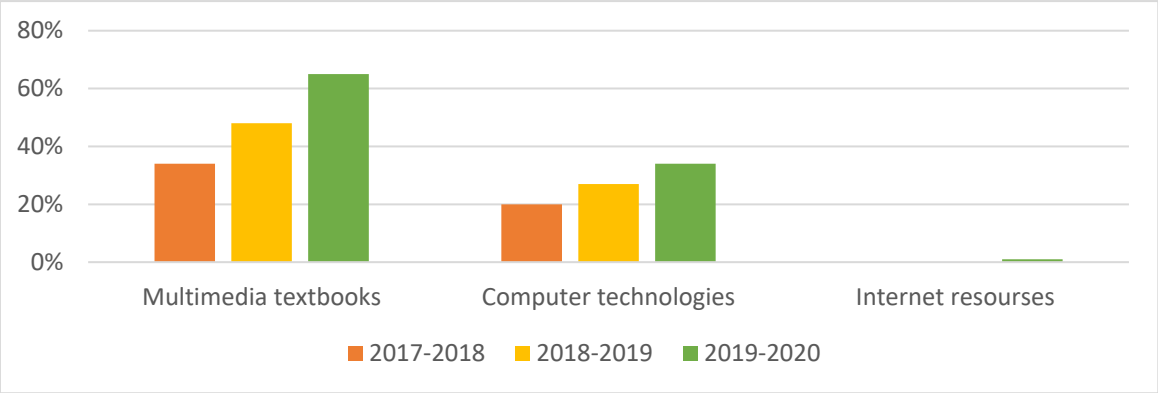

Figure 2. The use of ICT by teachers of St. Petersburg APPE at lectures

However, there are problems associated with the role of DEE in education even with a positive assessment of the latest technologies by teachers. Teachers are alarmed that the need for ICTs is increasing every year, as well as their complexity, and there is a chance that it will take longer to master them. The use of digital educational resources expands the possibilities of the educational process, while remaining only a tool in the hands of teachers.

7. Conclusion

The results of the study led to the following conclusions:

- digital technologies in the educational process of institutions of vocational education are used in conjunction with traditional forms of education, the latest ICTs have a positive effect on all indicators of the quality of education, which contributes to the development of the vocational education system;
- DEE allows building training based on the needs of students and employers;
- in the digitalization era, teaching using ICTs helps to improve pedagogical experience, makes it possible to broadcast and share experience, new ideas, and also becomes the coordinator of an online educational platform, a game pedagogue;
- teachers master digital technologies, improve their professional skills, and the result of using digital technologies is to improve the quality of educational services;
- teachers positively assess the need to master new technologies, as they open up new opportunities for training students and allow them to achieve dynamics, efficiency and effectiveness in their professional activities.

In modern conditions it is very important to identify the main ways of motivating teachers to organize DEE, mastering ICTs and creating a digital education system. Thanks to digital education in the APE system, conditions are created for systematic improvement of quality and expansion of continuing education opportunities for all categories of citizens.

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