EXTRACURRICULAR ACTIVITIES IN PRIMARY SCHOOL: DIGITAL CHALLENGES

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Acknowledgments: This research was funded from the grant for scientific research projects in priority research areas undertaken by the networking partner universities (I. Yakovlev Chuvash State Pedagogical University and Mordovian State Pedagogical University named after M. E. Evseviev) on the topic "Theoretical and Methodological Training of a Primary School Teacher in Organizing Extracurricular Activities of Children in the Context of Education Digitalization".

Abstract: Today, the digital educational technologies are used as a tool for swift conveyance of information, structuring of learning content, as an effective teaching method and a means for building high-tech learning environment conducive to the development of children. However, the issue of choosing methodological solutions for harnessing pedagogical potential of digitization in extracurricular activities remains understudied. This paper consolidates theoretical evidence for the use of digital educational resources and technologies in extracurricular activities; and the effectiveness of their use outside the curriculum hours was verified by way of experiment. Without diminishing the achievements of digitization, the results obtained in an experimental study suggest that their use should be prudent.

Keywords: digital learning environment, information and communication competence, information and communication technologies, digital educational resources (DER), extracurricular activities.

1 Introduction

The development of digital education following in the footsteps of digital economy and industry is one of the key state policy priorities. The need to build digital educational process has been triggered by the following factors:

- Children of a new generation (digital generation) have a distinctive social and psychological identity (Bilenko et al., 2019);
- Digital transformation of education plays an important role in building the digital economy (Uvarov et al., 2019);
- There exists a range of information systems specifically designed to address different tasks of educational process (Osinina & Davydova, 2018).

Digitization of education allows to take advantage of the dynamic development of digital technologies and tools, while preserving all constituents of educational process.

One of such constituents at the stage of primary general education are extracurricular activities. As demonstrated by experience, the extracurricular cognitive activities that are not only developing students' subject-specific knowledge in different areas, but also fostering their metadisciplinary skills, perform a function of integration of digital and traditional educational technologies.

In addition, the diverse content of extracurricular cognitive activities, children grouping based on their interest in certain activities, unconstrained and rather informal communication between teacher and schoolchildren facilitate self-realization of the younger generation, with extracurricular activities bearing personal meaning for all parties in the pedagogical process.

The use of digital technologies and tools, in turn, will help to address the issues of transition to personalized and result-oriented extracurricular activities on a whole new level.

However, the issue of choosing methodological solutions for harnessing pedagogical potential of digitization in extracurricular activities remains understudied.

2 Literature Review

The basic concepts in the education digitization domain are *digital literacy, digital learning environment, and information and communication competence.* Thus, researchers N. P. Petrov, G. A. Bondareva (2019) view *digital literacy* as a multifaceted concept that includes media literacy, attitude to innovations and communicative computer skills. Within the concept *digital educational environment*, scientists distinguish the value and meaning component, along with the software and methodological, the information and knowledge, the communication and technology components, and indicate the result corrective components through which the function of assessment, diagnosis and correction of an educational trajectory of student is performed (Chernobay, 2014, Bashirina, 2014).

The concept *ICT competence* holds a special place in the system of education today. In the pedagogical community, the most frequently used interpretation is the one integrating the knowledge, skills and abilities acquired both through theoretical and practical studies in computer science, as well as through the process of self-training on the use of information technologies, including in pedagogical activities (Henner, 2008).

Digitalization has reached across all levels of education worldwide: from preschool to higher education (Soltovets et al., 2019; Dmitrova et al., 2019; Otterborn et al., 2020). Researchers seek to find out how feasible and rational it is to bring the latest technology in the kindergarten space both for the purpose of developing general educational skills of children and from the perspective of gadgets' using by teachers for delivering the educational program at a preschool institution (Otterborn et al., 2020).

The digital transformation of society requires a new breed of individuals possessing necessary skills for quick information communications online and offline. In this regard, modern scientists pay the utmost attention to the processes of digital personalization of education for primary school students (Gomez & Alvarez, 2020). The researchers explore new digital tools for developing children's critical thinking skills (Pavlou, 2020), children's perception of information on digital carriers (Støle et al., 2020).

The evolution in educational technology has also affected school subject areas. Today, changes have occurred not so much in the learning content as in the educational setting and ways in which the content is presented. Practitioners are analyzing the rationality of the ubiquitous use of information and communication technologies, quite cautiously arguing that it might be too soon to abandon traditional tools and insisting on the optimal blend of best classical and digital practices (Hillmayr et al., 2020).

A digital breakthrough in all areas of social and cultural life requires highly qualified pedagogical personnel who would be able to lay the groundwork for cognitive and metadisciplinary skills of children from their very first days at school. Therefore, many studies deal with the training of students in pedagogical universities at a high innovative level. Scientists in their writings address the problem of immersing students into virtual environments where it is possible to simulate and live through different professional situations (Murillo-Zamorano et al., 2020), the use of digital libraries accessible remotely from anywhere in the world to instigate cognitive activities and build information competence (Pinho et al., 2020), aspects concerning development of design thinking in any software course (Lin et al., 2020).

The tendency remains that young professionals joining the school have better training on the use of digital technologies in the educational process as compared to the teachers already in service. The publications analyze the factors of ICT integration with different pedagogical profiles, the need for continuous professional development of representatives of the pedagogical community depending on the level of their digital competence (Diaz & Berrocoso, 2020). Relevant is the issue of arranging

classroom space amidst general transformation of the system of education (Marta, 2020).

Turning to the issue of extra-curricular activities at school, we would like to analyze the main aspects germane to this segment of educational process.

One of the most frequently used definitions in pedagogical practice is the one offered by teachers and scientists D. V. Grigoriev and P. V. Stepanov (2010). They define extracurricular activities as "all kinds of activities of schoolchildren (except for learning activities), through which it is possible and expedient to tackle issues of their upbringing and socialization". Recently, however, more and more research by scientists is not so much focused on the use of various methods and techniques for organizing extra-curricular activities (Kulebyakina et al., 2018), but rather on the study of the relationship between physical extracurricular activities and the emotional state of a child (Shukshina et al., 2018), opportunities for student's family involvement in the joint extracurricular activities (An, & Western, 2019), development of children's competences (Zhuravleva et al., 2018). A new and popular segment of extracurricular activities, which is being actively incorporated in the school practice, is the robotics and programming (Jagust et al., 2018).

3 Research Methodological Framework

The research purpose was to explore the possibilities of using digital educational resources and technologies for organizing extracurricular activities. The research objectives were to present theoretical evidence for the possible use of digital educational resources and technologies in each segment of extracurricular activities; and validate the effectiveness of digital educational resources and technologies in extracurricular activities by way of experiment.

The research employed both theoretical methods, with priority given to the analysis of scientific literature, systematization of material on the problem of using digital educational technologies in extracurricular activities, and empirical methods, in particular, a pedagogical experiment for achieving research goals.

The experiment was held in the academic year 2018-2019. The experimental base of research included 148 primary school students of municipal educational institutions in Saransk (Republic of Mordovia, Russia).

4 Results and Discussion

4.1 Exploring the Possibilities of Using Digital Educational Resources and Technologies in Different Segments of Extracurricular Activities

For determining a proper methodological approach to tap the potential of digitalization in extracurricular activities, we proceeded from a practical definition of digital educational technologies constituting the core of digitalization in the field of education, and digital educational resources, through which digital technologies get implemented. Digital educational technologies are used as a tool for swift conveyance of information, a tool for structuring learning content, an effective teaching method and a means for building high-tech learning environment conducive to the development of children. Let's explore the possibilities offered by this tool and means. In an attempt to analyze the efforts devoted by teachers to extracurricular activities today and to reveal what they have not yet done, we checked the effectiveness of digital educational technologies in the most common segments.

In pursuance of a goal to develop students' skills in scientific and intellectual work, the digitalization tools are used for conducting weeks of certain subjects, library lessons, competitions, olympiads, project work.

In preparation of students for solving olympiad tasks, a teacher finds necessary materials using resources on the Internet. The materials are demonstrated with the help of multimedia technology. For monitoring the acquired knowledge and skills, students take part in online and offline olympiads and competitions.

Library lessons have a close link to the latest computer technologies that help to search for various kinds of information, which nowadays is an imminent need of every educated person.

When organizing project activities, DERs are used to retrieve theoretical information (Internet), record the results of experimental research (computer, camera, video camera), demonstrate the results obtained as a result of project work (multimedia).

As concerns the function of nurturing legal, aesthetic, physical and ecological culture of students, digitalization tools prove useful in organizing various exhibitions of children's crafts, excursions to theaters and museums, thematic homeroom sessions.

Students' first acquaintance with the exhibitions of children's crafts occurs through online and offline attendance of this kind of events. In real-life conditions, DERs are most often used to add to the overall atmosphere of exhibition: lighting, virtual collages, background music.

Excursion entirely depends on digital educational technologies when it is a virtual excursion. DERs are used to record objects that students get acquainted with during the real-life excursion, as well as to demonstrate the exhibits.

To organize thematic homeroom sessions on culture of behavior and speech, ethics and aesthetics, a teacher may use resources from the Internet to select information, and computer equipment to present material to students. Students may perform thematic tests either online or offline.

For developing in students the sense of responsibility for their actions, the digitalization tools help students in their work in school yard, in taking care of the indoor plants, in various social campaigns, vocational guidance sessions. For assessing the results of work in this direction, different contests, exhibitions, projects' defense presentations are organized.

Prior to the process, a teacher with reliance on the DERs, briefs students on the safety rules applied to work at the school yard. Then students independently or with the teacher's assistance capture the work being done in photo shoot or on video.

When teaching students to take care of the indoor plants, the teacher shows students a video footage demonstrating the process of planting and watering the seedlings, soil loosening. However, as practice has proven, a teacher who personally demonstrates these actions hits the goal more quickly.

The same effect is achieved in various social campaigns and vocational guidance sessions, discussions, games. Familiarization with such events through digital media definitely expands the horizons of students, but only personal example of seniors, including teachers, as well as direct engagement, yield positive results.

When preparing children for giving preference to a moral way of living, the tools of digitalization are used during meetings with the veterans of the Great Patriotic War and of labor, in lessons of courage, and problem-solving disputes. In implementing all these forms of spiritual and moral education, the digital educational resources are used collect information and demonstrate photo, audio and video recordings.

In creating the environment conducive to the good physical and mental health of children, the digitalization tools are used for conducting conversations about health care and during dynamic breaks. But such forms of sports and health-improving extracurricular activities as attendance of sports sections, participation in sports competitions, cast doubt on the usefulness of digital educational resources.

4.2 Effectiveness of Digital Educational Resources in Extracurricular Activities

Effectiveness of digital educational resources and technologies in general intellectual and cultural education segments of extracurricular activities has not caused doubts already at a stage of theoretical analysis of materials. For the experimental study (into the effectiveness of DERs and DETs) we chose three segments of extracurricular activities: spiritual and moral education, sports and health, and social. For this purpose, we focused on the work of clubs as the most common form of extracurricular activities in primary school. In each of these segments, we chose two pairs of clubs close in their name. In each pair one club was experimental (EC), the other one was control (CC). Spiritual and moral education segment: "Magic Book" 13 children (EC) and "I am a Reader" 12 children (CC), "Workshop of Creativity" 14 children (EC) and "City of Masters" 12 children (CC); Sports and health: "Chess" 13 children (EC) and "Chess Club" 12 children (CC), "Young Tourist" 12 children (EC) and "Tourism Club" 11 children (CC); Social education: "Modern Cinema" 15 children (EC) and "Film and Modernity" 13 children (CC), "We Choose a Healthy Lifestyle" 10 children (EC) and "Healthy I Am, Healthy My Country Is" 11 children (CC). In experimental clubs the use of digital educational resources and technologies was maximum, while in control clubs it was minimum.

At the end of the school year, the final projects were completed, the content of which stemmed from the specifics of the club and the segment of education. The results of the experimental study are as follows. In those clubs which imply brainwork ("Magic Book", "I am a Reader", "Chess", "Chess Club", "Modern Cinema", "Film and Modernity"), the final results were higher in experimental clubs with the extensive use of digital educational resources and technologies. While in the clubs, which imply more physical activities (handwork), where a teacher should personally demonstrate the operations, and then correct and guide the same operations performed by students ("Workshop of Creativity", "City of Masters", "Young Tourist", "Tourism Club", "We Choose a Healthy Lifestyle", "Healthy I Am, Healthy My Country Is"), the higher results were recorded for the control clubs where the use of digital educational resources and technologies was minimized.

5 Conclusion

Thus, the conducted analysis of scientific literature, systematization of the materials on the use of digital educational resources and technologies in extracurricular activities and processing of the data obtained through the experiment led us to the following conclusions.

Digitalization has become deeply embedded in our lives. It is hard to imagine a modern lesson without the use of digital educational technologies. DERs are used at least at the stage of preparing a technological map, or during a lesson itself. The modern technology efficiently facilitates training, monitoring and assessment, being of an immense help to teacher at all stages of training.

Extracurricular activities, taking an eminent place in the educational process, should not remain on the sidelines of the overall digitalization. For each of the considered forms of extracurricular activities in five segments (general intellectual, general cultural, social, spiritual and moral, sports and health) there exists an efficient range of digital educational resources and digital educational technologies. Each time, while only stepping up to organizing the next extracurricular event, keeping the goal and clearly defined objectives in mind, a teacher should answer two questions: *What?* (in order to choose the appropriate digital educational resources) and *How?* (in order to choose the appropriate digital educational technologies).

Without blind submission to the general trend of mass digitalization, this experimental research was conducted to verify the effectiveness of digital educational resources and technologies in extracurricular activities.

While agreeing with the assertion about the effectiveness of the widest possible use of digital educational resources and technologies in the general intellectual and cultural segments of extracurricular activities, we still allow for the possibility to make adjustments to it. In no way detracting from the achievements of digitalization, the results obtained in an experimental study suggest that their use should be prudent.

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Primary Paper Section: A

Secondary Paper Section: AJ, AM