

**THE ROLE OF DIGITAL LITERACY IN DEVELOPING CREATIVITY IN PRIMARY SCHOOL STUDENTS**

**Annotation.** The article examines the role of digital literacy in developing the creativity of primary school students in the context of digitalization of education. The necessity of integrating digital technologies into the primary school educational process as a means of forming creative thinking is substantiated. The purpose of the research is to identify the influence of digital literacy components on the development of creative abilities in primary school students. The study used theoretical and empirical methods, including pedagogical observation, analysis of student activity products, and diagnostics of creativity. The research results confirm that the targeted use of digital educational resources contributes to the development of originality of thinking, flexibility, and cognitive initiative of students.

**Keywords:** digital literacy; creativity; primary school students; primary education; digital technologies; creative thinking.

**РОЛЬ ЦИФРОВОЙ ГРАМОТНОСТИ В РАЗВИТИИ ТВОРЧЕСКИХ СПОСОБНОСТЕЙ УЧАЩИХСЯ НАЧАЛЬНОЙ ШКОЛЫ**

**Аннотация.** В статье рассматривается роль цифровой грамотности в развитии креативности учащихся начальной школы в условиях цифровизации образования. Обосновывается необходимость интеграции цифровых технологий в образовательный процесс начальной школы как средства формирования творческого мышления. Целью исследования является выявление влияния компонентов цифровой грамотности на развитие творческих способностей у учащихся начальной школы. В исследовании использовались теоретические и эмпирические методы, включая педагогическое наблюдение, анализ продуктов деятельности учащихся и диагностику креативности. Результаты исследования подтверждают, что целенаправленное использование цифровых образовательных ресурсов способствует развитию оригинальности мышления, гибкости и познавательной инициативы учащихся.

**Ключевые слова:** цифровая грамотность; креативность; учащиеся начальной школы; начальное образование; цифровые технологии; креативное мышление.

**BOSHLANG'ICH SINIF O'QUVCHILARIDA IJODKORLIKNI RIVOJLANTIRISHDA RAQAMLI SAVODXONLIKNING O'RNI**

**Annotatsiya.** Maqolada ta'limni raqamlashtirish sharoitida boshlang'ich sinf o'quvchilarining ijodkorligini rivojlantirishda raqamli savodxonlikning roli ko'rib chiqilgan. Raqamli texnologiyalarni boshlang'ich maktab o'quv jarayoniga ijodiy fikrlashni shakllantirish vositasi sifatida integratsiya qilish zarurati asoslanadi. Maqolada ta'limni raqamlashtirish sharoitida boshlang'ich sinf o'quvchilarining ijodkorligini rivojlantirishda raqamli savodxonlikning roli ko'rib chiqilgan. Raqamli texnologiyalarni boshlang'ich maktab o'quv jarayoniga ijodiy fikrlashni shakllantirish vositasi sifatida integratsiya qilish zarurati asoslanadi. Tadqiqotning maqsadi raqamli savodxonlik tarkibiy qismlarining boshlang'ich sinf o'quvchilarida ijodiy qobiliyatlarni rivojlantirishga ta'sirini aniqlashdan iborat. Tadqiqotda nazariy va empirik usullar, shu jumladan pedagogik kuzatish, talabalar faoliyati mahsulotlarini tahlil qilish va ijodkorlik diagnostikasi qo'llanilgan. Tadqiqot natijalari raqamli ta'lim

152 *resurslaridan maqsadli foydalanish talabalarning fikrlash, moslashuvchanlik va kognitiv tashabbusining o'ziga xosligini rivojlantirishga yordam berishini tasdiqlaydi.*

**Kalit so'zlar:** *raqamli savodxonlik; ijodkorlik; boshlang'ich sinf o'quvchilari; boshlang'ich ta'lim; raqamli texnologiyalar; ijodiy fikrlash.*

The current stage of education development is characterized by the active digitalization of the educational process, which necessitates the formation of digital literacy in students at the initial stage of learning. In the context of the rapid development of information technologies, digital literacy is becoming an integral part of the general culture of the individual and an important factor in the successful socialization of the child.

The problem of developing the creativity of primary school students is of particular importance, as it is precisely at this age that the foundations of creative thinking, imagination, and cognitive initiative are laid. Digital educational technologies, when used pedagogically appropriately, create favorable conditions for students to demonstrate independence, flexibility of thinking, and creative self-expression.

Despite the significant number of studies devoted to digital literacy and creativity, the issue of their interrelationship in the context of primary education remains insufficiently studied. This determines the relevance of this research.

The problem of digital literacy in the general education system is actively being developed in modern pedagogical science in the context of the digitalization of society and the transformation of the educational environment. In Russian research, digital literacy is interpreted as an integrative education of the individual, including a set of knowledge, skills, and abilities that ensure the effective, safe, and meaningful use of digital technologies in educational activities [Robert; 73]. At the same time, it is emphasized that the formation of digital literacy should begin at the initial stage of education, as it is in primary school that the foundations of students' information culture are laid.

A number of domestic authors indicate that the digital educational environment, with a pedagogically sound organization, can act as a significant factor in the development of cognitive activity and creative thinking of primary school students [6; 58]. Using digital resources, interactive tasks, and project activities contributes to the formation of students' skills in analyzing information, putting forward hypotheses, and finding non-standard solutions to learning tasks.

In scientific research, special attention is paid to the problem of creativity as a personal quality, formed in the process of active and productive activity. In the works of D. B. Bogoyavlenskaya, creativity is considered as the ability to go beyond the given situation, manifested in the originality of thinking and the initiative of the subject of activity [1; 119]. The author emphasizes that the development of creativity requires the creation of special pedagogical conditions that stimulate students' independence and creative activity.

In the context of primary education, creativity is considered as the most important learning outcome, closely linked to the development of imagination, flexibility of thinking, and the ability to engage in transformative activities. Russian researchers note that digital technologies expand opportunities for younger schoolchildren to express themselves creatively through the use of graphic editors, multimedia tools, interactive applications, and digital projects [7; 41].

In German pedagogical science, the problem of digital literacy is studied within the framework of a media-pedagogical approach.

Thus, M. Kerres considers digital literacy as a component of media competence, including not only technical skills, but also students' creative, communicative, and reflexive abilities [10; 92]. The author emphasizes that digital media in the educational process should be used not as an end in itself, but as a means of developing students' thinking and creativity.

G. Tulodziecki emphasizes that the use of digital media in primary school contributes to the formation of students' independence, initiative, and creative activity, provided they are involved in problem-based and creative activities [11; 107]. According to the author, digital

technologies create conditions for the variable solution of educational tasks and stimulate children's interest in cognitive activity.

Analysis of research conducted in our country and abroad shows that digital literacy and creativity are closely interconnected and interdependent. At the same time, the necessity of comprehensive pedagogical support for this process, taking into account the age characteristics of primary school students and the didactic possibilities of the digital educational environment, is emphasized [10; 92]. Thus, a literature review indicates that the development of primary school students' creativity in the context of digitalization of education is possible with the purposeful formation of digital literacy based on the use of creatively oriented digital technologies and pedagogically sound teaching methods. This provision determines the scientific basis and direction of this research.

To achieve the research goal and verify the stated provisions, a complex of complementary methods ensuring a comprehensive study of the role of digital literacy in the development of creativity in primary school students was used. The methodological basis of the research was systemic, activity-based, and personality-oriented approaches, which allow us to consider the process of forming creativity as a holistic pedagogical phenomenon in the context of a digital educational environment.

#### *Theoretical research methods*

Within the framework of the theoretical stage of the research, analysis, synthesis, comparison, and generalization of psychological, pedagogical, and methodological literature on the problems of digital literacy, creativity, and the use of digital technologies in primary education were applied.

Theoretical analysis made it possible to clarify the conceptual and categorical apparatus of the study, reveal the structure of digital literacy of primary school students, and identify the main components of creativity subject to diagnostics [1; 119]. Analysis of domestic and foreign scientific sources contributed to the identification of modern approaches to organizing the digital educational environment and the substantiation of pedagogical conditions under which digital technologies have a developmental impact on the creative thinking of primary school students [6; 58; 10; 92].

#### *Empirical research methods*

The main empirical research methods included pedagogical observation, analysis of student activity products, diagnostic tasks, and the interpretive method.

Pedagogical observation was carried out in the process of educational activities, extracurricular activities, group and individual work of students with digital educational resources. Particular attention was paid to observing the completion of creative digital tasks (creating presentations, digital drawings, mini-projects), which allowed for the recording of manifestations of initiative, originality of thinking, independence, and flexibility in choosing methods of activity. Pedagogical observation was considered as a method for identifying real behavioral manifestations of creativity in the context of educational interaction [9; 97].

Analysis of student activity products was used to assess the results of the creative activity of primary school students in the digital environment. As products of the activity, digital drawings, multimedia presentations, interactive tasks, and educational mini-projects were considered. Analysis of these materials allowed us to identify the level of formation of creative skills, the ability to transform information and create original digital products [12; 103].

Diagnostic methods included a system of tasks aimed at identifying creativity indicators such as fluency, flexibility, and originality of thinking. The tasks were adapted to the age characteristics of primary school students and integrated into a digital format, which ensured increased motivation and engagement of children in the diagnostic process [7; 41].

The interpretation method, which allowed for the correlation of the obtained empirical data with the theoretical provisions of psychological and pedagogical science, revealed stable trends and patterns of tolerant behavior formation in the student environment [4; 214].

#### *Organization of research*

Empirical research was conducted on the basis of a general education school with the participation of students in grades 3-4. The research was carried out in several stages. At the ascertaining stage, the initial level of students' digital literacy and creativity was determined. The formative stage was aimed at including students in the system of digital creative tasks and project activities. At the control stage, a repeated analysis of creativity indicators was conducted to identify the dynamics of their development.

### **Results and Discussion**

Analysis of the results of the empirical study was aimed at identifying the features of the influence of digital literacy on the development of creativity in primary school students. In accordance with the stated goal and objectives of the study, the indicators of creativity manifested in the process of students completing digital educational and creative tasks, as well as the dynamics of their change at different stages of the study, were assessed.

#### *Results of pedagogical observation*

The pedagogical observation data showed that in the process of systematic use of digital educational resources in primary school students, the level of cognitive activity and initiative increases significantly. Schoolchildren demonstrated readiness to independently choose digital tools, offered original ways to complete tasks, and actively participated in group project activities.

Particular attention was drawn to the behavioral manifestations of creativity, expressed in the flexibility of thinking, the ability to vary ways of solving learning tasks, and the desire to express oneself through digital products. These manifestations were most clearly observed when completing project-based and problem-based-creative tasks, which confirms the conclusions about the developmental potential of the digital educational environment [9; 97; 6; 58].

#### *Analysis of student activity products*

Analysis of the products of students' digital activities (presentations, digital drawings, interactive mini-projects) allowed us to identify qualitative changes in the level of formation of creative skills. In the works of students with a higher level of digital literacy, a pronounced originality of the idea, the use of non-standard visual and textual solutions, and the desire to integrate various digital tools were observed.

An important indicator of creativity development has become the ability to transform the received information and create new, authored digital products based on it. These results align with researchers' positions that digital technologies in the context of digital socialization expand opportunities for students to express themselves creatively, contribute to the development of a subjective position and the formation of self-presentation skills in the educational media environment [7; 41].

#### *Results of diagnostic tasks*

The results of the diagnostic tasks showed a positive trend in the development of the main indicators of creativity - fluency, flexibility, and originality of thinking. In the control stage of the study, students demonstrated a higher level of ability to generate ideas, quickly switch between different ways of solving problems, and create original digital solutions.

Especially significant changes were recorded in students actively involved in digital project activities. This allows us to assert that the level of digital literacy directly influences the development of creativity, acting as a tool and condition for the creative activity of primary school students [1; 119].

Interpretation of the obtained data allowed us to identify a stable relationship between the formation of digital literacy and the level of development of creativity in primary school students. Digital technologies used in the educational process not only facilitate the assimilation of educational material but also create conditions for active creative search, independence, and initiative of students.

The obtained results confirm the positions of Russian and German researchers that the digital educational environment, with pedagogically appropriate organization, contributes to the development of originality of thinking and the ability for variable problem-solving [10; 92]. An

important condition for the effectiveness of this process is the inclusion of students in the system of problem-creative and project tasks using digital tools.

It should be noted that without targeted pedagogical support, the use of digital technologies does not always lead to the development of creativity. This aligns with G. Tulodziecki's conclusions on the necessity of methodically justified use of digital media in primary school [8; 107].

Thus, the research results confirm the expediency of integrating digital literacy into the process of developing the creativity of primary school students and emphasize the importance of a comprehensive methodological approach, including observation, diagnostics, and analysis of activity products.

### **Conclusion**

The conducted research made it possible to comprehensively consider the role of digital literacy in developing the creativity of primary school students in the context of the digitalization of modern education. Theoretical analysis and empirical research results confirmed that digital literacy acts not only as a set of technical skills but also as a significant pedagogical resource that ensures the development of creative thinking, initiative, and independence in primary school students.

The results of pedagogical observation, analysis of student activity products, and the completion of diagnostic tasks indicate that there is a stable relationship between the level of digital literacy formation and creativity indicators. Students actively engaged in digital project and creative activities demonstrate a higher level of fluency, flexibility, and originality of thinking, as well as the ability to create authored digital products.

Empirical data confirm that the purposeful and pedagogically sound use of digital educational resources contributes to the activation of students' cognitive activity, the formation of skills for independent search for solutions, and the development of the creative potential of the individual. At the same time, it has been established that the developmental effect of digital technologies is fully manifested only in the presence of systematic pedagogical support and the inclusion of students in problem-based and creative forms of work.

The obtained results are consistent with the provisions of domestic and foreign studies that emphasize the importance of the digital educational environment as a factor in the development of creativity in primary school age [1; 119; 10; 92; 11; 107]. At the same time, the conducted research clarifies these provisions in relation to the conditions of primary education and specifies the role of digital literacy as a condition and means of developing students' creative thinking.

The practical significance of the research lies in the possibility of using the obtained conclusions in designing primary school curricula, developing digital creative tasks, and organizing educational and extracurricular activities aimed at developing the creativity of primary school students. The research results can be used in the system of professional development of teachers, as well as in the development of methodological recommendations for the integration of digital technologies into the educational process of primary school.

The prospects for further research are related to expanding the sample, studying the age-related dynamics of creativity development in the digital environment, as well as analyzing the influence of individual components of digital literacy on the formation of students' creative abilities at various levels of general education.

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