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The Attitude of Parents to The Use of Digital Technologies by Their Preschool and Primary School Age Children

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Abstract: The study is relevant in the context of the early digitalization of childhood and the key role of parents in mediating children's digital activity. The purpose of the work is to study the peculiarities of the attitude of parents to the use of digital technologies by their preschool and primary school age children. A survey of 220 parents was conducted using statistical analysis (Chi-square, Mann-Whitney U-test). The results revealed significant differences: parents of younger students allow more freedom in using gadgets and the Internet, while parents of preschoolers control access and time more strictly. The trend towards the "rejuvenation" of digitalization has been confirmed, with modern preschoolers gaining access to technology earlier. The concepts of risks (eye-sight, emotional sphere) and opportunities (learning, development) coincide in both groups. The prospects of the study are related to the study of parental attitudes in adolescence and the influence of cognitive factors on digital socialization.

Keywords: *parents, digital technologies, preschoolers, primary school students, parental mediation*

Introduction

In the modern world, the process of digitalization is part of everyday life. It is no longer just the benefits or harms of digital technology for a modern child. Currently, starting from the initial stage of education, the child adapts to the digital environment, which becomes more complicated at each stage of socialization. Nowadays, due to the development of artificial intelligence technologies, the spread of neural networks in education, business, advertising and other areas of public life, the problem of the ontogenesis of the use of digital technologies in attempts to understand how to create conditions for successful adaptation of a child in the digital world is particularly acute. It seems to us that a child's adaptation to the digital world involves, first of all, the development of digital technology skills, starting with the use of various gadgets and interaction with the Internet. At the same time, one of the most important aspects of this problem is the issue of psychological safety for children using digital technologies in terms of adequacy for the child's age. All this presupposes the understanding that, firstly, digital technologies are new psychological tools (Babaeva, Voiskunsky, 1998; Rubtsova, 2019) contribute to the mental and psychological development of the child, suggesting the strengthening of the role of an adult as a guide of the child in the area of their immediate development (Vygotsky), and secondly, it is necessary to minimize developmental disorders of the cognitive, emotional, personal and interpersonal spheres of the child.

According to a representative survey of the Russian population aged 14 and older (HSE ISSEK, 2022), one in three children (30% of children aged 3-6) has their own smartphone at preschool age, almost one in eight at the same age has a tablet (13%), one in twenty parents purchase a laptop, "smart watches /fitness bracelets (5% each) or even a desktop computer (4%). The study by Soldatova and Rasskazova (2021) shows that the early digitalization of childhood creates new challenges for the development of self-regulation and voluntary attention.

The actualization of this problem occurred during the COVID-19 pandemic, when distance learning

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technologies became an integral part of everyday life, even for preschool children. There remains a theoretical debate in scientific discourse regarding the "risks-opportunities" dichotomy of childhood digitalization, where empirical evidence demonstrates statistically significant contradictions in assessing the cognitive effects of digital technologies (Marciano L. et al., 2021). The authors point out that users' subjective assessments of the negative impact of smartphones on cognitive functions often do not correlate with objective indicators; conclude that there is no consensus on whether cognitive impairments are the cause or consequence of problematic smartphone use; describe contradictory effects of multitasking, where frequent switching between applications in individuals with an impulsive type of use leads to decreased productivity and vice versa (Marciano L. et al., 2021). In a longitudinal study Twenge and Campbell (2018) established the non-linear nature of the relationship between the time spent using digital devices and the psychological well-being of adolescents.

Research on digital behavior places different emphasis on understanding the psychological aspects of using digital technologies. The most common are studies of the basic mechanisms of digital addiction formation. Tonacci et al. (2019) have developed a conceptual model of nomophobia (irrational fear of being left without a mobile phone or without communication), namely, loss of connectivity, refusal to communicate, inability to receive information, and discomfort from lack of access to a gadget. Tonacci et al. (2019) empirically proved that nomophobia demonstrates stable correlations with anxiety disorders and sleep disorders. A study by Moreno et al. (2020) showed a link between a phobia of missed benefits and problematic use of social media.

The cognitive aspect of digital behavior is revealed in the work of Hadar et al. (2017), which demonstrates the negative impact of multitasking when using smartphones on cognitive control. The authors found that frequent switching between applications leads to a decrease in the ability to concentrate and the amount of working memory, which indicates the neurocognitive consequences of digitalization. Wilmer et al. (2017) found that heavy smartphone use can lead to limitations in solving tasks that require intense attention. While a review by Pablo E. Torres et al. (2023) shows that new interactive gaming technologies can have a positive impact on children's behavior related to self-control, cooperation, decision-making, and problem solving appropriate to their development. Interactive digital tools also support user creativity, according to Marte Hoff Hagen et al. (2023).

The socio-psychological context of the problematic use of digital technologies is investigated by Hong et al. (2019). The work revealed the mediating role of self-control in regulating stress and compulsive use of gadgets. Low self-control increases the likelihood of using digital technologies in stressful situations, thereby establishing a mechanism for the formation of addictive behavior. Ryan et al. (2016), investigating the satisfaction of basic psychological needs for autonomy, competence and connectedness, revealed a link between the use of social networks and psychological well-being.

The age-related aspect of the problem is analyzed in a meta-study by Lissak (2018), which established a statistical relationship between gadget use time and symptoms of ADHD, cognitive impairment, and emotional dysregulation in children. The work highlights the special vulnerability of the developing psyche to digital influences. Spasskaya and Slyusar (2022) revealed that parents of preschool children tend to underestimate the cognitive risks of digital technologies, focusing mainly on threats to physical health.

The social consequences of the intensive development of digital technologies and their active implementation in everyday life are revealed in a study by Kowalski et al. (2019). The authors studied gender differences in experiencing the consequences of cyberbullying. It was found that girls show a higher vulnerability to depressive symptoms and social anxiety than boys. Odgers and Jensen (2020) in a systematic review emphasize that the majority of adolescents do not experience serious negative consequences from the use of digital technologies, but vulnerable groups require special attention.

Ellis et al. (2019) proposed a fundamentally new approach to measuring digital addiction through the analysis of objective behavioral patterns of phone use, which makes it possible to overcome the limitations of subjective assessment in the traditional survey method for this research subject. Livingstone et al. (2017) have developed a comprehensive model of parental mediation that takes into account both restrictive and proactive strategies for regulating children's digital activity.

Thus, the logic of the study of psychological determinants in digital behavior and the use of digital technologies unfolds from the study of the basic mechanisms of formation of dependent behavior through the analysis of cognitive and socio-psychological consequences to the development of improved diagnostic methods, which reflects the evolution of scientific understanding of the problem as a whole.

W. Bronfenbrenner's ecological theory of development (Bronfenbrenner, 1979) can constitute the methodological basis of the research, receiving a modern sound in the context of the digital transformation of childhood. According to this theory, the digital environment manifests itself as a new element that has a direct

impact on the child's development processes through a change in the nature of interaction in the child-parent-technology system (Johnson and Puplampu, 2008). At the same time, digital technologies create a specific chronotope that transforms the temporal and spatial parameters of the developing environment (Neumann, 2023). An important aspect of the application of the ecological approach is the analysis of the interaction between different levels of the ecological system – from the immediate digital microenvironment to the macro-level of the digital culture of society (Livingstone et al., 2017). This allows us to consider digital socialization as a multi-level process mediated by both the individual characteristics of the child and broader social contexts.

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The methodological basis of the research can be constituted by W. Bronfenbrenner's ecological theory of development (Bronfenbrenner, 1979), which receives a modern sound in the context of the digital transformation of childhood. According to this theory, the digital environment manifests itself as a new element that has a direct impact on the child's development processes through a change in the nature of interaction in the child-parent-technology system (Johnson and Puplampu, 2008). At the same time, digital technologies create a specific chronotope that transforms the temporal and spatial parameters of the developing environment (Neumann, 2023). An important aspect of the application of the ecological approach is the analysis of the interaction between different levels of the ecological system – from the immediate digital microenvironment to the macro-level of the digital culture of society (Livingstone et al., 2017). This allows us to consider digital socialization as a multi-level process mediated by both the individual characteristics of the child and broader social contexts.

An additional theoretical framework is the model of parental mediation by S. Livingstone (Livingstone et al., 2017), which offers a systematization of strategies for parental regulation of children's digital activity. We can talk about restrictive mediation (Livingstone et al., 2017), active mediation (Nikken and de Haan, 2015), mediation through sharing (Soldatova and Rasskazova, 2021), mediation with the support of school and parent cooperation (Duygu Gür, Yalın Kılıç Turel, 2022), the characteristics of parental mediation can make various contributions to the psychological well-being of children (Rudnova N.A. et al., 2023). Denisenkova N.S. and Taruntaev P.I. (2022) argue that all forms of parental mediation can reduce the negative effects of media and protect against unwanted content, while emphasizing that the problem of the impact of digital devices on a child must be considered comprehensively, taking into account adults as organizers and intermediaries of the child's interaction with various media content.

At the same time, the effectiveness of various mediation strategies is context-dependent and is determined by the age characteristics of the child, the digital competence of the parents and socio-cultural factors (Slyusar and Chichinina, 2020).

The works of Mascheroni and Siibak (2021) revealed the paradox of the "digital divide", which manifests itself in the fact that technological accessibility does not neutralize, but rather exacerbates differences in the quality of digital socialization. The authors demonstrate that despite the increasing availability of digital devices, significant differences remain in digital skills and the ability to critically comprehend digital content among children from different social groups (Mascheroni and Siibak, 2021). The socio-economic situation may be related to the behavior of digital technology users through the active participation of parents and support for their child's device use, which seems to provide opportunities that enhance digital maturity (Teresa Koch et al., 2024). The authors argue that in addition to environmental influences through parents, there are individual differences within also relating to the ability of young people to use devices in a useful way. These findings are consistent with earlier studies of digital inequality, which emphasized the importance of not only physical access to technology, but also the development of digital competencies (Hargittai, 2002; Van Dijk, 2005).

The research of Soldatova and Shlyapnikov (2020) focuses on the problem of asynchronous development of technological infrastructure and parental digital competence. Parents often demonstrate an insufficient level of digital literacy necessary for effective mediation of children's digital activity (Soldatova and Shlyapnikov, 2020). This problem is particularly acute in the context of the rapid digitalization of education, when parents do not have time to adapt to new technological challenges (Livingstone et al., 2021).

Modern research emphasizes that effective digital socialization requires an integrated approach that takes into account both technological aspects and psychological and pedagogical factors (Zillien

and Hargittai, 2009). At the same time, the development of digital resilience – the ability to withstand digital risks and effectively use the opportunities of the digital environment - is of particular importance (Soldatova and Rasskazova, 2021), as well as children's awareness of their digital data and online privacy issues (Andria Agesilaou, et al., 2022).

The conducted analysis allows us to state that the digital socialization of modern children is a complex multilevel process characterized by significant contradictions and requiring a comprehensive scientific understanding. The study of parental ideas about the use of digital technologies by children of preschool and primary school age is particularly relevant, since during this particular period the foundations of digital behavior are laid.

Early involvement of children in the digital environment raises the issue of finding a balance between using the educational potential of technology and minimizing their negative impact on cognitive and emotional development. The ecological approach allows us to consider parental mediation strategies as a key factor mediating the child's interaction with technology. The relevance of the study of this aspect is also conditioned by the fact that parental attitudes form the "digital biography" of a child and determine the trajectory of his digital socialization (Livingstone et al., 2017).

Materials and methods

220 parents (10.5% men) participated in the study, of which 37.3% were parents of preschool-age children (7.4% men), 32.7% were parents of primary school-age children (16.7% men).

The age characteristics of the parents who participated in the study were as follows (Table 1).

Table 1. *Age characteristics of the sample population (in %)*

Parents' age	Group 1	Group 2
Under 30 years of age	15.5	4.2
30-40 years of	71.6	69.4
Over 40 years of age	12.8	26.4

Note: Group 1 – parents of preschool children; Group 2 – parents of primary school children

It is also important to describe the age and gender characteristics of the children whose parents participated in the study (Table 2).

Table 2. *Age and gender characteristics of children (in %)*

Indicators	Group 1	Group 2
Male	50%	59.7%
Female	50%	40.3%
Average age	4.6 (3 years – 22.3%, 4 years – 31.8%, 5 years – 19.6%, 6 years – 18.9%, 7 years – 7.4%)	8.8 (7 years – 9.7%, 8 years – 34.7%, 9 years – 25%, 10 years – 23.6%, 11 years old – 6.9%)

Note: Group 1 – children of preschool age; Group 2 – children of primary school age

The main research method is a questionnaire. The questionnaire was developed by the author's team. The questionnaire consists of 24 questions with a simple alternative answer. 4 questions collect socio-demographic data, 20 questions are devoted to collecting information about the availability of a gadget / the Internet access for a child, the age of its receipt /access, and forms of parental control over the use of the gadget/the Internet, the forms of a child's interaction with a gadget/the Internet, ideas about the benefits and harms of digital technologies for the child.

The questionnaire, aimed at studying parental perceptions in the field of childhood digitalization, is based on a comprehensive analysis of modern domestic and foreign research. The theoretical basis for the block on parental control and mediation strategies was classical and modern works defining the structure and types of mediation practices. A study by Livingstone and Helsper (2008) describes a well-established typology in international science (active mediation, restrictive mediation, monitoring), and the work of Slyusar and Chichinina (2020) adapts this concept to the Russian socio-cultural context, which makes it possible to accurately characterize the forms of parental control used in the questionnaire.

The block, which explores children's digital practices, the age at which they started using gadgets and Internet access, was formed taking into account data from major international and Russian studies. The works of Mascheroni and Olafsson (2016), Soldatova and Shlyapnikov (2020) describe current data on age norms, types of online activity, and features of children's access to digital technologies, which allowed them to formulate relevant questionnaire questions.

The substantive validity of the block on parents' ideas about the benefits and harms of digital technologies is based on the research of Spasskaya and Slyusar (2022). The authors focus on categorizing parental anxieties and the recognized benefits of using gadgets and providing Internet access for children. The results of the Duygu Gür and Yalın Kılıç Türel study (2022) confirm that even with a positive attitude towards the use of gadgets by children, especially for educational purposes, parents are concerned about the possible risks and security threats their children may face in a virtual environment. According to research conducted by Patricia Gomez et al. (2017), only parental control can reduce risky online experiences of adolescents with frequent Internet use. The Odgers and Jensen review (2020) helped to take into account the health and emotional risks in the questionnaire when providing children with access to digital technologies.

In addition, when developing the questionnaire, the factor of parents' own digital competence and activity was taken into account, the relationship of which with educational practices is convincingly shown in the studies of Nikken and de Haan (2015), Soldatova and Rasskazova (2021). Nur W. Rahayu et al. (2021) argue that mothers play a greater role in raising children and They use digital technologies more often, acting as an informal teacher.

Thus, the questionnaire is methodologically sound and relies on relevant and valid sources, which ensures the high quality of the empirical data collected.

The survey procedure was conducted face-to-face, in the same conditions for all the respondents (audience, 1.5 m between the survey participants, identical forms and writing materials). The form of the survey is group, blank. The questionnaire offered to read the questions and choose the most appropriate answer, the procedure was anonymous. Informed voluntary consent was obtained from each of the participants included in the study.

The purpose of the research is to study the peculiarities of the attitude of parents to the use of digital technologies by their preschool and primary school age children.

Research objectives: to analyze current research on parents' attitudes towards digital technologies; to describe statistically significant differences in the attitudes of parents of preschool and primary school age children towards the use of digital technologies by children; to describe parents' views on the positive and negative effects of digital technologies on children; to identify differences in the attitudes of parents of preschool and primary school age children towards the use of gadgets and the Internet; to study the awareness of parents of preschool and primary school age children about the standards of safe use of digital technologies; to identify differences in the regulation of children's access to digital technologies among parents with different digital activities.

Statistical procedures were used: descriptive statistics, Chi-square test to compare two empirical distributions, Mann-Whitney U Test.

The assumptions that were tested were as follows: 1) the attitude of parents to the use of digital technologies by their preschool and primary school age children can be different in a number of parameters: availability, age of access, purpose, independence of use, time characteristics of use (hypothesis 1); 2) considerations of parents of preschool and primary school age children about the positive and negative impact of digital technologies on children can differ (hypothesis 2); 3) the attitude of parents of preschool and primary school age children to gadget use and Internet access may be excellent (hypothesis 3); 4) parents who are informed about the standards of safe use of digital technologies by children of different ages regulate the use of digital technologies by children more strictly (hypothesis 4); 5) parents who actively use digital technologies in their lives, they less strictly regulate the use of digital technologies by children (hypothesis 5).

It is necessary to pay attention to the limitations of the study. The study is based on a sample with a predominance of women (89.5%) and respondents aged 30-40 years, which limits the possibility of extrapolating conclusions to the entire general population of parents. The results mostly reflect the position of mothers in this age group. Using questionnaires as the main method of data collection carries risks related to the social desirability of responses. Parents could give socially acceptable answers, underestimating, for example, the time of their own use of gadgets or the degree of uncontrollability on the part of the child. The study was conducted on a local sample, which does not fully take into account regional and socio-cultural differences in access to digital technologies and parental mediation practices on a large scale. The focus on quantitative parameters of technology use and general ideas about risks and benefits could leave out the deep motives, values, and specific family parenting practices that influence digital socialization.

Results

To test the assumption that the attitude of parents of preschool and primary school age children to the use of digital technologies by their children can differ in a number of parameters: availability, age of access, purpose, independence of use, time characteristics of use (hypothesis 1), we used the Chi-square test to compare two empirical distributions and Mann-Whitney U Test (tables 3, 4, 5).

Table 3. *The attitude of parents of preschool and primary school age children to the use of gadgets (computer, tablet, smartphone) by their children*

Parameters		Group 1	Group 2	Statistics
The child has own gadget	yes	43.2%	87.5%	Chi-square test = 38.887, p=0.001
	no	56.8%	12.5%	
Age of getting your own gadget		4.3 (σ=1.6)	5.9 (σ=2.8)	Mann-Whitney U Test =1332, p=0.001
The age of the planned purchase of your own gadget		6.8 (σ=2.5)	7.9 (σ=2)	Mann-Whitney U Test =3289, p=0.008
The purpose of the gadget	is not needed	12.8%	2.8%	Chi-square test = 7.841, p=0.049
	Entertainment	7.4%	13.9%	
	Education	63.5%	62.5%	
	is used when parents are busy	16.2%	20.8%	
Independence of gadget use	do not use independently	15.5%	1.4%	Chi-square test = 27.455, p=0.001
	uses only in the presence of parents	30.4%	11.1%	
	uses with a parent and independently	45.3%	63.9%	
	uses independently	8.8%	23.6%	
Regularity of free access to the gadget	no free access	18.9%	4.2%	Chi-square test = 14.258, p=0.003
	on weekends	16.2%	15.3%	
	1-2 times during the working week	20.3%	12.5%	
	daily access	44.6%	68.1%	
The time a child spends in the gadget	up to 30 minutes	45.3%	18.1%	Chi-square test = 22.848, p=0.001
	From 30 min. to 1 h	22.3%	45.8%	
	More than 1.5 hours	17.6%	27.8%	
	Unlimited	14.9%	8.3%	

Note: Group 1 – parents of preschool children; Group 2 – parents of primary school children

It was found that parents of preschool and primary school age children have different attitudes towards the child's own gadget, the actual and planned age of receiving the gadget by the child, the tasks of using the gadget by the child, independent use of the gadget by the child, control of free access to the gadget and the time the child spends in the gadget. At the same time, parents of primary school children allow more freedom in the use of the gadget by the child.

We shall take a closer look at the considerations of parents of preschoolers and younger schoolchildren about the purposes of using digital technologies by children (Table 4).

Table 4. *Perceptions of parents of preschoolers and primary school students about the goals of using digital technologies by children (in%)*

Parameters	Group 1	Group 2	Statistics
For entertainment (cartoons, music, games, etc.)	80.4	72.2	Chi-square test =1.874 p=0.171
For cognitive purposes (educational and developmental programs, searching for the necessary scientific information, performing teacher assignments)	38.8	69.4	Chi-square test =18.192 p=0.001
Creating your own media product: shooting videos, changing photos, creating drawings, etc.	8.8	23.6	Chi-square test =8.915, p=0.003
Communication with relatives	40.4	47.2	Chi-square test =0.915, p=0.339
Communication with peers	2.7	45.8	Chi-square test =63.977, p=0.001
I have no control over this	4.1	0	Calculation has not been performed, the expected frequency is less than 5

Note: Group 1 – parents of preschool children; Group 2 – parents of primary school children

We see that parents of preschoolers and elementary school students allow the use of digital technologies for entertainment and communication with relatives. Parents of primary school-age children are significantly more likely to assume the use of digital technologies for the purposes of education, creating their own media products and communicating with peers. It is also interesting that not a single parent of a

primary school student choses the answer “I have no control over this.”.

Next, we shall look at the attitude of parents towards children’s access to the Internet (Table 5).

Table 5. *The attitude of parents of preschool and primary school age children to their children’s access to the Internet*

Parameters		Group 1	Group 2	Statistics
The child has access to the Internet	yes	41.9%	88.9%	Chi-square test = 43.718, p=0.001
	no	58.1%	11.1%	
Age of Internet access		4.3 (σ=1.5)	7.4 (σ=1.9)	Mann-Whitney U Test =428.5, p=0.001
Age of planned Internet access		7.3 (σ=2.8)	7.8 (σ=3.4)	Mann-Whitney U Test =4556, p=0.076
Ways to control a child’s online presence	Parental control programs	59.5%	50%	Chi-square test = 17.832, p=0.001
	Monitoring the history of website visits	6.8%	26.4%	
	Using the Internet only in the presence of a parent	28.4%	16.7%	
	I will not/do not control Internet usage	5.4%	6.9%	

Note: Group 1 – parents of preschool children; Group 2 – parents of primary school children

It has been established that parents of preschool and primary school age children have different attitudes towards the child’s free access to the Internet, as well as the age of providing the child with access to the Internet and the methods of parental control of the child’s online presence. Interestingly, parents of both preschoolers and elementary school students who did not provide Internet access to their children at the time of the survey agree in their assessment of the age at which they started using the Internet.

To test the assumption that parents of preschool and primary school age children may have different ideas about the positive and negative effects of digital technologies on children (hypothesis 2), we used the Chi-square test to compare two empirical distributions (Tables 6, 7).

Table 6. *The views of parents of preschool and primary school age children about the negative impact of digital technologies on children (in %)*

Parameters	Group1	Group2	Statistics
Health disorders: eye - sight, posture	80.4	75	Chi-square test =0.842, p=0.359
Decreased motor activity	27	23.6	Chi-square test =0.294, p=0.587
Emotional disorders: irritability, overexcitation, inability to cope with emotions	67.3	63.9	Chi-square test =0.258, p=0.611
Decreased cognitive activity in activities without gadgets	19.9	14.1	Chi-square test =1.082, p=0.298
Impaired communication with peers	13.1	16.7	Chi-square test =0.499, p=0.480
Exposure to inappropriate content in childhood	41.5	30.6	Chi-square test =2.458, p=0.117
The influence of strangers on child development	19	22.2	Chi-square test =0.303, p=0.582
Addiction to games and entertainment content	39.9	41.7	Chi-square test =0.065, p=0.798

Note: Group 1 – parents of preschool children; Group 2 – parents of primary school children

It has been established that the opinions of parents of preschoolers and younger schoolchildren about the harmful effects of digital technologies on children do not differ. Parents call the health and emotional disorders the most harmful effects of gadgets on children, and just under half of parent’s point to such threats of digital technologies for children as exposure to inappropriate content for children and addiction to games and watching entertainment content.

Table 7. *The views of parents of preschool and primary school age children about the positive impact of digital technologies on children (in %)*

Parameters	Group 1	Group2	Statistics
Distance learning and homework preparation	54.7	68.1	Chi-square test =3.558, p=0.059
Broadening horizons, cultural development	55.4	54.2	Chi-square test =0.030, p=0.862
Additional education: master classes, courses, practical skills training (cooking, dancing, etc.)	55.4	56.9	Chi-square test =0.047, p=0.829
Online communication with relatives and friends	41.2	45.8	Chi-square test =0.422, p=0.516
Development of attention, memory, logic	21.6	15.3	Chi-square test =1.240, p=0.266
Development of the ability to select information	14.9	11.3	Chi-square test =0.525, p=0.469
Feeling competent, “up-dated”	11.5	12.5	Chi-square test =0.048, p=0.827

Statistical analysis has shown that there are no differences in the views of parents of preschool and primary school age children about the positive impact of digital technologies on children. Parents consider the most useful opportunities of digital technologies for children to be the possibility of distance learning, expanding horizons and cultural development, and the opportunity to receive additional education remote-

ly. Also important for parents is the opportunity to communicate with relatives using digital technologies.

To test the assumption that parents of preschool and primary school age children may have different attitudes towards gadget use and Internet access (hypothesis 3), we used the Chi-square test to compare two empirical distributions and the Mann-Whitney U test (Table 8).

The Chi-square test results showed that 81.1% of parents who allow their child to have their own gadget provide them with Internet access. Whereas only 24.7% of parents who do not allow their child to have their own gadget provide their child with Internet access (Chi-square test =69.715, p=0.001). At the same time, additional calculations for groups of parents of preschool-age children and primary school-age children showed similar results, and therefore, we consider it inappropriate to provide additional calculations for groups, and we limit ourselves to presenting statistical analysis for the entire sample.

Furthermore, we analyzed the specifics of the differences in the attitudes of parents of preschoolers and younger schoolchildren towards the age of access to gadgets and the Internet. To do this, we divided the respondents into those who have already provided a personal gadget to a child, and those who forbid a personal gadget to a child.

Table 8. *The attitude of parents of preschool and primary school age children to gadget use and Internet access*

Parameters	Group 1	Group 2	Statistics
Parents who provided their child with a personal gadget			
Age of Internet access	4.4 (σ=1.5)	7.4 (σ=1.9)	Mann-Whitney U Test =330.5, p=0.001
Age of getting your own gadget	4.5 (σ=1.6)	7.3 (σ=1.8)	Mann-Whitney U Test =620.5, p=0.001
Parents who forbid a child to have a personal gadget			
Age of planned Internet access	7.3 (σ=2.1)	10.6 (σ=0.7)	Mann-Whitney U Test =1496.5, p=0.011
The age of the planned purchase of your own gadget	7.8 (σ=2.6)	10.6 (σ=5)	Mann-Whitney U Test =656.5, p=0.001

Note: Group 1 – parents of preschool children; Group 2 – parents of primary school children

In the group of parents who provided the child with a personal gadget, differences were found between parents of preschool and primary school age children in the age of providing the gadget and Internet access. Parents of preschoolers used to allow a child to access both a personal gadget and the Internet.

Differences were also found in the group of parents who forbid a child to have their own personal gadget. Firstly, the age of a child's planned access to digital technologies in this group is higher than in the group of parents who provided a personal gadget to a child. Secondly, we are seeing the same trend. Parents of preschoolers plan to provide their child with access to a personal gadget and the Internet earlier than parents of younger schoolchildren.

Table 9. *Attitude towards digital technologies of parents of preschool and primary school age children who are informed about the standards of safe use of digital technologies (in %)*

Parameters		GroupA	GroupB	GroupC	Statistics
Group1					
Positive impact of digital technologies: distance learning and homework preparation		31.1	18	50.8	Chi-square test =8.744, p=0.013
Positive impact of digital technologies: development of attention, memory, logic		28.1	15.6	56.3	Chi-square test =6.568, p=0.037
Positive impact of digital technologies: development of the ability to select information		13.6	27.3	59.1	Chi-square test =7.05, p=0.029
Group 2					
The purpose of the gadget	Entertainment	12.5	25	11.1	Chi-square test =12.833, p=0.046
	Learning	62.5	50	66.7	
	Used when parents are busy	25	8.3	22.2	
The time a child spends in the gadget	up to 30 minutes	8.3	8.3	27.8	Chi-square test =14.28, p=0.027
	From 30 minutes to 1 hour	45.8	41.7	47.2	
	More than 1.5 hour	45.8	25	16.7	
	Unlimited	0	25	8.3	
Negative impact of digital technologies: impaired communication with peers		8.3	8.3	83.3	Chi-square test =6.5, p=0.039
Positive impact of digital technologies: Distance learning and homework preparation		38.8	22.4	38.8	Chi-square test =8.305, p=0.016
Positive impact of digital technologies: Feeling of being competent, "up-dated"		77.8	11.1	11.1	Chi-square test =9.397, p=0.009

Note: Group 1 – parents of preschool children; Group 2 – parents of primary school children, Group A – parents who are informed about the standards for the safe use of digital technologies, Group B – parents who are not informed about the standards for the safe use of digital technologies, Group C – parents who have an approximate understanding of the standards for the safe use of digital technologies

To test the assumption that parents who are informed about the standards of safe use of digital technologies by children of different ages more strictly regulate the use of digital technologies by children (hypothesis 4), we used the Chi-square test to compare two empirical distributions (Table 9). In the group of parents of preschool children, 36.5% are informed about the standards of safe use of digital technologies, 26.4% are not informed, 37.2% of parents have a rough idea. In the group of parents of primary school children, 33.3% are informed about the standards for the safe use of digital technologies, 16.7% are not informed, and 50% of parents have a rough idea.

The data was compared on the following issues: whether a child has a personal gadget, the purpose of the gadget, the degree of independence of the child's use of the gadget, the time of access to the gadget, the permissible time spent by the child with the gadget, access to the Internet, ways to control Internet use, the negative consequences of using digital technologies, the positive consequences of using digital technologies. Table 8 shows only those scales for which significant differences or a tendency to differences were found.

It has been established that in the group of parents of preschool children with varying degrees of awareness about the standards of safe use of digital technologies, only considerations about the positive impact of digital technologies on children differ.

The group of parents of primary school-age children has different considerations about the purpose of the gadget, the time the child spends in the gadget, the disruption of communication with peers, as well as the benefits of digital technologies in learning and feeling competent, "up-dated".

To test the assumption that parents who actively use digital technologies in their lives less strictly regulate their children's use of digital technologies (hypothesis 5), we used the Chi-square test to compare two empirical distributions (Table 10).

Table 10. *The attitude of parents with varying levels of digital technology use towards the use of gadgets (computer, tablet, smartphone) and the Internet by children (in %)*

Parameters		Group A	Group B	Group C	Statistics
The child has his own gadget	Yes	42.9	59.4	63.9	Chi-square test =5.052, p=0.080
	No	57.1	40.6	36.1	
Independence of gadget use	Does not use independently	16.7	9.4	9.7	Chi-square test = 8.115, p=0.230
	Uses only in the presence of parents	33.3	24.5	18.1	
	Uses with a parent and independently	40.5	54.7	52.8	
	Uses independently	9.5	11.3	19.4	
Regularity of free access to the gadget	No free access	23.8	13.2	9.7	Chi-square test = 9.006, p=0.173
	On weekends	16.7	17.9	12.5	
	1-2 times during the working week	16.7	13.2	25	
	Daily access	42.9	55.7	52.8	
The time a child spends in the gadget is	up to 30 minutes	50	35.8	29.2	Chi-square test = 8.308, p=0.216
	From 30 minutes to 1 hour	33.3	27.4	31.9	
	More than 1.5 hour	9.5	23.6	23.6	
	Unlimited	7.1	13.2	15.3	
The child has access to the Internet	Yes	42.9	56.6	66.7	Chi-square test = 6.182, p=0.045
	No	57.1	43.4	33.3	
Methods of monitoring a child's online presence	Parental control programs	52.4	54.7	61.1	Chi-square test = 6.537, p=0.366
	Monitoring the history of site visits	7.1	16	12.5	
	Using the Internet only in the presence of a parent	33.3	25.5	18.1	
	I will not/do not control the use of the Internet	7.1	3.8	8.3	

Note: Group A – parents who use the gadget for non–professional purposes for less than 1 hour; Group B – parents who use the gadget for non-professional purposes for 1-2 hours; Group C - parents who use the gadget for non-professional purposes for more than 3 hours

To test this hypothesis, we considered it inappropriate to separate parents of preschoolers and parents of younger schoolchildren and the analysis was performed for the group as a whole. It was revealed that 19.1% of parents use the gadget for non–professional purposes for less than 1 hour, 48.2% for 1-2 hours, and 32.7% for more than 3 hours.

53.2% of parents use the gadget for entertainment, 57.3% of parents use the gadget to view educational content, 15.5% of parents use the gadget to create their own Internet product, 72.3% of parents use the gadget to communicate with relatives and friends.

It has been established that the attitude of parents with different digital activities to the use of digital technologies by children differs only in terms of the child's access to the Internet. Parents who use gadgets for less than an hour are less likely to provide Internet access to their child, while with an increase in

the time of digital activity for non-professional purposes of parents, there is an increase in the percentage of providing Internet access to the child.

Thus, the statistical analysis of the data allows us to conclude that hypothesis 1 was confirmed, hypothesis 2 was not confirmed, hypotheses 3,4 and 5 were partially confirmed. Next, we proceed to discuss the results obtained.

Discussions

A study of parents' attitudes towards the use of digital technologies has shown that parents of preschool and primary school age children differ in their views on this issue. Parents of primary school-age children allow more freedom in the use of the gadget by the child. Thus, 87.5% of parents of primary school children and only 43.2% of parents of preschoolers admit having their own gadget. However, the age of actual or planned receipt of the gadget is higher for parents of primary school–age children (actual – 5.9 years, planned - 7.9 years). That is, according to parents of preschool–age children, the age limits are lower (the actual age is 4.3 years, the planned age is 6.8 years), and modern preschoolers will have access to a personal gadget and digital technology earlier than modern younger schoolchildren. We can say that in this way, we are witnessing the process of rejuvenation of the digitalization of society. This downward trend in the age of first access to digital devices is also described in foreign studies, which note that children begin to actively interact with screens as early as the age of 2, which forms a new digital reality of early childhood (Livingstone et al., 2019), and is confirmed by Russian researchers who state the onset of "digital childhood" with its characteristic early start (Soldatova and Shlyapnikov, 2020).

There is a fairly large body of work that examines changes in personality, cognitive processes, emotional characteristics, patterns of behavior that are the result of group correctional work.

The ideas of parents of preschoolers and younger schoolchildren about the purpose of using a gadget by children tend to show differences. And, if education, as a means of legalizing a gadget in the hands of a child, is indicated by both groups of parents, then parents of preschoolers are more likely to respond that the gadget is not needed by the child, while parents of schoolchildren indicate significant reasons for using the gadget by the child for entertainment and performing the function of "babysitter" when parents are busy. Interestingly, in connection with the above, parents of preschool children limit the independence of using the gadget by the child and the regularity of the child's access to the gadget more than parents of schoolchildren. Parents of preschoolers consider the time that a child spends with a gadget to be acceptable, up to 30 minutes, parents of younger schoolchildren – up to 1-1.5 hours.

Parents of preschool and primary school age children have different attitudes towards the child's free access to the Internet. 41.9% of parents of preschoolers provide their child with Internet access and 88.9% – parents of primary school students. The age at which Internet access began also differs among the study groups. Here we are also witnessing the process of rejuvenation of the digitalization of society. If the parents of schoolchildren provided access to the Internet for the first time to a child at the age of 7.4, then the parents of preschoolers at the age of 4.3. However, parents of both preschoolers and younger schoolchildren who did not provide Internet access to their children at the time of the survey agree in their assessment of the age at which they started using the Internet (7.5 years old).

The ways to monitor a child's online presence also vary. Parents of preschool children are significantly more likely to choose parental control programs and personal presence. Parents of younger students are more likely to choose parental control programs and monitoring their browsing history. Slinkina O.V. et.al (2020) note that younger children use mobile devices under greater parental control, their connection is stronger than in adolescence, and their digital practices are in the process of formation. The effectiveness of parental educational influences, such as sharing and discussing content, at a younger age is confirmed by the research of Nikken and de Haan (2015). Scientists conclude that such parenting strategies in children's interaction with digital technologies reduce risks and contribute to the development of a child's digital literacy. A study by Slyusar and Chichinina (2020) indicated that parents are characterized by a combination of restrictive and technical control strategies, while active mediation is less developed.

An analysis of the differences in parents' attitudes towards gadgets and the Internet suggests that parents who allow a child to have a personal gadget also provide them with Internet access. And only 24.7% of parents who do not allow their child to have their own gadget provide their child with Internet access. It has also been established that parents of preschoolers allow their children to access both a personal gadget and the Internet earlier.

Parents' ideas about the goals of using digital technologies by children have both similarities and differences. Thus, entertainment is an acceptable goal for a child to use digital technologies for both groups of parents (parents of preschoolers – 80.4%, parents of younger schoolchildren – 72.2%). By entertainment, parents mean watching cartoons and movies, and playing online games. The frequencies for the purpose of using a gadget, such as communicating with relatives, are also equally distributed (parents of preschoolers – 40.4%, parents of younger schoolchildren – 47.2%). In other categories, the views of parents of preschoolers and schoolchildren will differ. Spasskaya E.B. et.al (2023), exploring parental mediation strategies in the use of mobile technologies, noted that children equally use digital technologies, both for learning activities and for distraction from it. The authors name three main dimensions of parents' ideas about the forms of mobile device use by their children, including addition, distraction and substitution of educational activities (Spasskaya et.al ., 2022). A similar dual role of digital technologies, acting as a tool and as a distraction, is also presented in a study by Mascheroni and Olafsson (2016), who concluded that despite the recognition of educational value, the main parental anxiety remains the risk of excessive involvement in entertainment content to the detriment of other activities.

The use of digital technologies for cognitive purposes is statistically more often noted by parents of younger schoolchildren (69.4%) than preschoolers (38.8%). The use of digital training programs, the search for educational information and the fulfillment of teacher assignments are important here.

Communication with peers is also a more significant reason for a child's use of digital technologies for parents of primary school children (45.8%) than for parents of preschoolers (2.7%). This indicates that parents of schoolchildren understand that their child is approaching puberty, where intimate and personal communication will be the main activity, and the use of flexibility in parenting strategies. This transition reflects a general pattern. While technology is primarily used for entertainment at preschool age under parental control, social functions come to the fore at school age, which requires parents to change strategies from restrictive to more mentoring and support-oriented (Livingstone and Helsper, 2008). Soldatova and Rasskazova (2021) also note that parents are often not prepared for the new risks associated with children's social activity online during adolescence.

We find it interesting that 0% of parents of primary school-age children in a survey about the purpose of using digital technologies for children chose the category "I don't control it." 4.1% of parents of preschoolers chose this answer option. This may indicate that this category of parents may not yet fully realize the extent of the presence of digital technologies in a child's life and treat this problem carelessly.

The views of parents of preschool and primary school age children about the positive and negative effects of digital technologies on children do not differ statistically. Parents call the health and emotional disorders the most harmful effects of gadgets on children, and just under half of parents point to such threats of digital technologies for children as exposure to inappropriate content for children and dependence on games and watching entertainment content. Concerns about the impact on physical health, especially on eye-sight and sleep, as well as on psychological well-being are common among parents, according to research on parental anxiety in the digital age (Odgers and Jensen, 2020; Spasskaya and Slyusar, 2022). It is indicated that parents are more inclined to identify risks than they have specific knowledge about the mechanisms of their minimization (Spasskaya, Slyusar, 2022). Parents consider the most useful opportunities of digital technologies for children to be the possibility of distance learning, expanding horizons and cultural development, and the opportunity to receive additional education remotely. Also important for parents is the opportunity to communicate with relatives using digital technologies.

Parents of primary school-age children are more informed about the standards of safe use of digital technologies. Thus, it was found that in the group of parents of preschool children, 36.5% are informed about the standards of safe use of digital technologies, 26.4% are not informed, 37.2% of parents have a rough idea. In the group of parents of primary school children, 33.3% are informed about the standards for the safe use of digital technologies, 16.7% are not informed, and 50% of parents have a rough idea. This suggests that parents of preschoolers are more careless about the safe use of digital technologies, since due to the age restrictions of children, the problem of security in the digital sphere is not perceived by them as acute. The low level of digital literacy and risk awareness among parents of young children is a vulnerability factor, which is confirmed by the findings of a study by Livingstone et al. (2017), linking parental mediation with the level of their own digital competencies. Soldatova and Rasskazova (2021) explicitly point to the lack of digital competence of parents as a key barrier to effectively accompanying a child in a digital environment.

Parents of preschool-age children who have an approximate understanding of the norms of safe

use of digital technologies are more confident in the positive impact of digital technologies on a child's learning, development of attention, memory, logic and the ability to select information.

Describing the purpose of the gadget, parents of primary school children with varying degrees of awareness of the standards for the safe use of digital technologies consider education to be the highest priority, however, informed parents are more likely to use the gadget to distract the child when they are busy, and uninformed parents prioritize the use of the gadget by the child for entertainment. Parents of younger students who are informed about the standards for the safe use of digital technologies are more likely to choose time intervals of up to 1 hour and 1.5 hours, while uninformed parents also allow a child to use a gadget without restrictions.

Parents of younger students who have a rough understanding of the standards for the safe use of digital technologies are significantly more likely to choose the answer that digital technologies negatively affect communication with peers. Informed parents are more likely to note the benefits of digital technology, which consists in feeling competent and modern. Informed parents and parents with a rough understanding are more likely to note the benefits of digital technologies in their child's education.

In the study, we also studied the digital activity of the parents themselves. It was revealed that 19.1% of parents use the gadget for non–professional purposes for less than 1 hour, 48.2% for 1-2 hours, and 32.7% for more than 3 hours. However, given the subject of the survey, we assume that the results are somewhat distorted due to the desire of the parents who participated in the survey to underestimate the data on the time they spend using digital technologies for non-professional purposes. But even the results obtained indicate an intense digital activity of parents. Parents' own behavior is a significant model for children. Research shows that high digital activity of parents, especially in the form of "fabbing" (distraction to gadgets while communicating with a child), correlates with more frequent and prolonged use of gadgets by children and can negatively affect child-parent relations (McDaniel and Radesky, 2018). A review of research conducted by Katrin Braune-Krickau et al. (2021) demonstrates that smartphone use by parents in the presence of children under 5 years of age may be associated with a decrease in parental sensitivity and responsiveness.

It has been established that the ideas of parents with different digital activities about the use of digital technologies by a child do not differ and correspond to the picture described above. The tendency to show differences is observed only in the child's ideas about having access to the Internet. Parents who use gadgets for less than an hour are less likely to provide Internet access to their child, while with an increase in the time of digital activity for non-professional purposes of parents, there is an increase in the percentage of providing Internet access to the child.

Conclusions

The study of the attitude of parents of preschool and primary school age children to the use of digital technologies allows us to draw conclusions.

1. Parents of preschool and primary school age children have different attitudes towards the use of digital technologies by children. Parents of primary school-age children allow more freedom in the use of the gadget by the child.
2. The process of rejuvenation of childhood digitalization appears to be acute. Modern preschoolers get access to a personal gadget and digital technology earlier than modern younger schoolchildren, as well as access to the Internet earlier, including without the presence of a parent. However, parents of primary school-age children still allow more freedom in the use of gadgets and the Internet by the child.
3. Parents of primary school children are more likely to choose remote ways to monitor their child's online presence. While parents of preschoolers still maintain a personal presence as a form of child control.
4. Parents' ideas about the purposes of using digital technologies by children have both similarities and differences. Entertainment and communication with relatives through digital technologies are common for parents of preschoolers and younger schoolchildren. Parents of younger students more often consider it advisable to use digital technologies in teaching and communicating with their peers.
5. The ideas about the negative and positive impact of digital technologies on the children of parents of preschoolers and primary school students coincide. Parents call the health and emotional disorders the most harmful effects of gadgets on children. Parents consider the most useful opportunities of digital technologies for children to be the possibility of distance learning, expanding horizons and

cultural development, and the opportunity to receive additional education remotely.

6. Parents of primary school children are more informed about the standards of safe use of digital technologies. Parents of preschoolers are more careless about the safe use of digital technologies.
7. The ideas of parents with different digital activities about the use of digital technologies by a child do not differ, only the attitude to Internet access varies. The more time a parent spends online, the more willing they are to allow the child to do so, including on their own.

The prospects for the development of this problem are to study the ideas of parents of younger and older adolescents about the safe use of digital technologies, the positive and negative impact of digital technologies on the child. Also, the study of cognitive and behavioral factors influencing parents' ideas about the use of digital technologies by children will serve as a continuation of the study of the stated problem.

These studies can be used by the psychological service of educational institutions when conducting educational and counseling work with parents.

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Conflict of interests

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Author Contributions

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