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Mediation of productive activity as a condition for overcoming computer addiction in primary school age

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Abstract: Introduction. The relevance of the problem under study is associated with the specifics of the social situation of development, especially at a younger age, as a determining factor in the formation of addiction. The purpose of the study is to study the perception of parents about the peculiarities of using the Internet by younger students and to develop a project aimed at reducing computer addiction in such children. **Theoretical justification.** The theoretical substantiation of the study lies in the fact that modern digital opportunities in creating animated films become a condition for mediating and coordinating productive forms of activity for younger students. The system of productive activities within the framework of the Plasticine Cartoons project, through the systematic organization of joint activities of parents and children, made it possible to minimize computer addiction among younger students. **Results**. The practical significance of the work is determined by the designation of the problem and the consideration of one of the options for an effective form of organizing the activities of children and adults, mediated by the use of digital technologies. As a result of the project implementation, children noted changes in the following areas: cognitive, emotional and behavioral. **The discussion of the results.** During the implementation of the project, due to the variety of means of interaction between the child and peers and parents, computer addiction in children decreased in the following parameters: reduction in the time spent at the computer, gadgets; an increase in the use of gadgets by children as a means of implementing any activity; increasing the level of communication with peers; expanding the idea of options for joint activities with parents and their own pastime; an increase in situations in which children are oriented towards a dialogue with their parents; no negative reaction to the request to turn off the computer (phone). **Conclusion.** The results obtained in the course of the study can be used in work with children of preschool and primary school age. The materials of the study are relevant for the training of psychologists, teachers and educators.

Keywords: computer addiction, project activity, mediation, productive activity, younger schoolchildren

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Highlights

- computer addiction can be considered from four areas of manifestation: cognitive, emotional, behavioral, physiological;
- modern digital opportunities in creating animated films become a condition for mediating and coordinating productive forms of activity for younger students;
- The system of productive activities within the framework of the project through the systematic organization of joint activities of parents and children allowed minimizing computer addiction among younger students.

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Introduction

In the current socio-political situation, characterized by limited social contacts, an increase in technical innovations in the field of consumption, entertainment, education, the number of hours spent on the Internet by different age categories and, especially, by younger schoolchildren is increasing (Bydtaeva, 2015; Kuznetsova, 2021; Berezovskaya , 2019; Marker, Gnambs, Appel, 2019). In this regard, there is an antagonism between the variety of computer services and their impact on human mental health. The current level of development of science does not allow drawing unambiguous conclusions about whether the Internet is a risk factor or a source of development, so many researchers discuss the impact of computer addiction on the human psyche (Beznos, 2018; Bogacheva, 2019; Brenner, 1997; Griffiths, 2009; Olson and Kutner, 2015; Reisinger, 2011). There is a need to define a system of psychological and pedagogical means that allows minimizing the time spent playing computer games and reorienting people from a gaming format to a creative (productive) one (Ignatova, 2020). Therefore, it is important to focus on the specifics of the social situation of development as a determining factor in the formation of where, as a result of technological progress and the changing experience of mankind, a digital society arises, the basis of which is the digital environment (Orlov, 2019). The created conditions of the electronic environment directly affect the behavior of a person who finds himself in a new situation (Dyatlova, Mikhina, 2019). Studies show the psychological features of the change associated with: certain value orientations of the individual due to gambling addiction (Efremov, 2015); with attention problems and impulsivity (Gentile, 2012); with the neural basis of computer games (Kühn, 2011); with spatial thinking (Greenfield, 2009). The term "addiction" is characterized as a behavioral deviation, however, using the example of considering the problem of computer addiction based on the ideas of domestic psychology (Zaretskaya, 2017; Zapesotskaya, 2012; Ivanov, 2007), it suggests that the problem of enthusiasm for virtual activities, computers, gadgets can be " a consequence of both dissatisfaction with human needs and a compensatory nature" (Zaretskaya, 2017). We focus on the formulation of the concept of computer addiction by M.S. Ivanova: "Computer addiction is an addiction to activities related to the use of a computer, leading to a sharp reduction in all other activities, limiting communication with other people" (Ivanov, 2007). The concept of computer addiction includes addiction on a computer, gadgets, the Internet, computer games, etc.

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M.V. Kostrikova examines the factors in the formation of computer addiction and its impact on a person from the point of view of psychology and gives a classification of computer addiction, which is divided into gaming, communicative and cognitive (Kotrikova, 2015). I. Goldberg offers his own criteria for diagnosing this type of addiction (Goldberg, 1996).

According to I.V. Zapesotskaya and V.B. Nikishina, the key factors that cause computer addiction and are inherent in the subject-object model of relations are manipulation, excessive control and protection, a ban on expressing feelings or transforming the ways of expressing them, etc. (Zapesotskaya, 2012). An analysis of research papers showed that computer addiction can be viewed from four areas of manifestation (Skvortsova, 2018; Zapesotskaya, Nikishina, 2012; Yang, 2015): other activities); emotional (irritability when it is impossible to play computer games; neglect of one's own health, hygiene and sleep in favor of spending more time at the computer); behavioral (the impossibility of planning one's own time for gadgets, difficulties in engaging in joint games with peers, restrictions on tactile contacts); physiological (deterioration when unable to play, rapid fatigue).

O.V. Zaretskaya, analyzing works on the topic of computer addiction, systematized a number of factors that cause computer addiction: a low degree of concern for each other, a weak sense of belonging to a family; it is not customary to express one's feelings openly or it is customary to express them to a weak degree; a low degree of encouragement of family members to self-affirmation, independence and independence in thinking about problems and making decisions; low degree of family respect for ethical and moral values and rules; low degree of activity in the social, cultural and political spheres of activity; low participation in various outdoor activities and sports; low importance of order and organization in relation to structuring family activities, financial planning, clarity and certainty of family rules and responsibilities (Zaretskaya, 2017).

To date, the issue of computer addiction of younger students is one of the most pressing and can be attributed to the problems of the modern family, because it is the parents who can positively influence the child in order to prevent computer addiction (Elkina, 2017). Despite the extensive material and experience of psychological work accumulated in working with various kinds of addictions, the question of the system of means for working with this problem in childhood remains open. We believe that the use of a project-based form of education (Khoziev, 2000) will allow not only expanding the orientation in the system of parent-child relations of adults, but also providing psychological conditions for the emergence of other meanings in the use of technical means.

Methods

The purpose of this study is to study the views of parents about the peculiarities of using the Internet by younger students and to develop a project aimed at reducing computer addiction in such children. Modern digital capabilities in creating animation are becoming a condition for mediating and coordinating productive forms of activity (Rubtsova, 2019; Khoziev, 2000; Savostina, Khokhlova, 2021). The project "Plasticine cartoons" for parents and younger schoolchildren, which is based on a system of productive activities implemented in the joint activities of children and parents: verbal creativity, visual activity, design, modeling. The combination of these types of activities is aimed at constructing by the child, together with the adult, the desired image of the hero and its embodiment in reality. The implementation of the project corresponds to the traditions of the theory of planned-staged formation by P.Ya. Galperina (Khoziev, Khokhlova, Plekhanova,

2014). Tasks of the ongoing project:
- to form a system of funds to obtain their own product of activity;
- to form a system of means of interaction between children and parents (on the example of mothers) in order to organize joint activities and the possibility of correcting various aspects of computer addiction.

As a hypothesis of the second stage of the study, we assumed that due to the variety of means of interaction between the child and peers and parents within the framework of project activities, a decrease in computer addiction will be noted in the following parameters (Yang, 2015):
- reduction of time spent at the computer, gadgets;
- an increase in the use of gadgets by children as a means of implementing any activity (not for entertainment);
- increasing the level of communication with peers;
- expanding the idea of options for joint activities with parents and their own pastime;
- an increase in situations in which children will be oriented towards a dialogue with their parents;
- no negative reaction to the request to turn off the computer (phone).

Project implementation scheme: number of lessons - 11, 1.5-2.5 hours each for 2 months. The time limits of the classes changed, as the group remained either to discuss significant points or to finish the work they had begun (creating a script, modeling characters, etc.).

There are 3 substantive blocks in the project structure:

1) building interaction between younger students and their parents (solving communication problems);

2) verbal creativity (acquaintance with the structure of fairy tales; development of artistic means);

3) creation of an animated film (plot, script, drawing and modeling of characters, creation of scenery, shooting).

Prior to the implementation of the project, a questionnaire “Caught by the same network” was conducted (G. Soldatova, E. Zotova, A. Chekalina, O. Gostimskaya), aimed at studying the perception of parents about the peculiarities of using the Internet by younger students: user activity, the content of Internet activities, understanding of the Internet -security. In the system of existing questions, we added an additional question about the presence of joint activities of parents and children. The use of a parental attitude test questionnaire (A.Ya. Varga, V.V. Stolin) is due to the need to identify the characteristics of parental relationships. At the final lessons of the project, the questionnaire "Parent-Child Interaction" (I.M. Markovskaya) was used to diagnose the features of interaction between parents and children. The questionnaire allows you to analyze the features of the interaction of a parent with a child. Mathematical and statistical processing of the obtained data was carried out using the Mann-Whitney test.

Results

The sample at the first stage of the empirical study consisted of parents of younger school-children - 63 people aged 27-45 years, of which 21% were men and 79% were women. At the second stage of the study, these parents, together with their children, were invited to participate in the Plasticine Cartoons project. Of the 25 parents who came, only 10 people remained who were ready to take part in the project and work together with the child. The rest of the parents did not express a desire to study together with the child, they actively suggested that the psychologist “work only with children”, motivating them with a lack of time, etc.

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Most children use gadgets only at home (60%), 66.7% of respondents feel that they need more information on how to protect their child from illegal or negative content. More than half of parents have established rules-restrictions when using the Internet from the phone - 62% (games, cartoons, etc.); computer use - 14.3%; 14.3% did not set any rules. At the same time, it should be noted that half of the parents surveyed (52.4%) establish a temporary regime for using the Internet. There are a number of examples of restrictions that parents use, and it is almost impossible to check the result of the implementation of these restrictions by children. For example, 38% of parents do not allow their child to use rude words in chats and games; 28.6% - do not allow children to meet in life with those they met on the Internet, and also prohibit visiting certain sites; 23.8% - do not allow chatting with strangers, giving personal information about themselves and downloading applications. More than a third of respondents (38.1%) say that their child spends 1.5 - 3 hours a day on the Internet (Table 1).

Table 1

The results of the diagnosis of the attitude of parents to children (%)

Testee	Questionnaire of parental attitude (A.Ya. Varga, V.V. Stolin)					Questionnaire "Parent-Child Interaction" (I.M. Markovskaya)									
	Acceptance	Cooperation	Symbiosis	Authoritative	Little loser	Demanding	Strictness	Control	Emotional	Acceptance	Cooperation	Anxiety	Sequence	Educational confrontation	Satisfaction
M (36)	100	87,5	71,4	28,6	12,5	20	30	20	30	90	80	10	80	30	50
O (40)	90,9	75	28,5	28,6	12,5	30	30	20	50	100	80	20	90	60	100
A (40)	90,9	75	28,5	28,6	0	70	60	40	70	100	80	10	70	70	100
A (46)	87,9	87,5	71,4	28,6	25	20	60	40	50	60	50	20	30	40	60
O (30)	97	87,5	43	86	25	30	70	40	50	100	40	60	20	100	60
H (37)	98,2	89	73	26,6	15,5	20	25	30	35	70	80	15	75	30	50

Testee	Questionnaire of parental attitude (A.Ya. Varga, V.V. Stolin)					Questionnaire "Parent-Child Interaction" (I.M. Markovskaya)									
	Acceptance	Cooperation	Symbiosis	Authoritative	Little loser	Demanding	Strictness	Control	Emotional	Acceptance	Cooperation	Anxiety	Sequence	Educational confrontation	Satisfaction
Λ (42)	89,9	75	29,5	27,5	14,5	25	30	20	45	90	80	20	80	60	90
A (39)	85,9	77,5	25,5	25,6	5	65	60	35	65	95	75	10	75	75	100
K (43)	88,5	89,5	69,4	29,5	20	20	50	40	45	50	55	20	35	40	60
T (34)	95	85,5	40	88	30	30	70	40	50	100	30	50	20	90	50

When the computer (phone) is turned off, the reaction is always different: 57.2%, 38% are "offended" and "irritated", 33.3% are "crazy", 28.6% are "nervous". As an alternative to gadgets, 47.6% of parents do "something together with the child" (did not indicate what exactly), also 47.6% "the child takes care of himself", 38% "communicate with the child on various topics", 28 .6% "watch TV or read books". A low level of involvement of parents in joint activities is stated. Although the question: "Does your family have traditions or customs in which you are engaged in joint activities with children?" - 57.1% answered that they do, but did not specify which ones. One third of the interviewed parents indicated that their children spend less than 3 hours at the computer, while in a face-to-face conversation everyone noted "long time". We cannot unequivocally state the presence of computer addiction in children, but if there is a negative reaction to the restriction of activity in the computer, it indicates this trend.

The results of diagnosing the attitude of parents to children are presented in Table 1. Comparison of the attitude of parents to children in pre- and post-control was carried out according to the corresponding scales of the methods of the test questionnaire of parental attitude (A.Ya. Varga, V.V. Stolin) and the test questionnaire "Interaction parent-child "(I.M. Markovskaya) - acceptance / non-acceptance, cooperation / cooperation, symbiosis / emotional closeness, authoritarianism / control, little loser / relationship satisfaction - showed statistically insignificant results (Mann-Whitney test at $p > 0.05$).

Discussion

An analysis of the survey results showed that the joint activities of children and parents are poorly represented and are declared to a greater extent than they are implemented (parents do

not indicate the specifics of the activity). The low level of joint activity causes regulated relations, the prevalence of prohibitions.

The Plasticine Cartoons project created by us is aimed at minimizing negative manifestations in the behavioral, emotional and cognitive spheres. At the first lessons, the participants were presented with a system of exercises for the joint activities of the child and the mother: "The Blind Man and the Guide", representing their family, the "Life Line" of the family, game situations for resolving conflicts of various kinds. In the process of joint performance of tasks, parents, feeling anxious, did not take actions aimed at building a dialogue with the child and minimizing their own discomfort (for example, suggesting to name the number of steps to the object; controlling moments were stated to a greater extent: "Do not rush", "Do not run" etc.). Thus, firstly, an image of the relationship "I will be patient, the main thing is to do ...", which was transferred to other types of activities in the project, both from the parents and from the children, arose; secondly, even with their eyes closed, the parents controlled the actions of the children "so describe what is around ... do not be silent", where dialogism and planning of the participants' activities were manifested to a minimum extent. In general, characterizing the joint activities of parents and children, the following was stated at the beginning of the project: the children demonstrated an egocentric position in the representation of the family, which is nominally represented, spoke more about themselves, and the mothers supported the child's initiative, but did not try to reorient him to a discussion of more general family moments. Most parents understood joint activities as "being around", and not doing something with the child, where everyone implements their part in accordance with the assigned role.

In the process of solving project tasks (mastering the structure of literary works, the specifics of the content, etc.), the participants interacted from the position of the accepted roles: screenwriters, directors, decorators, artists, critics, actors. As a result of the project, in a reflective discussion, the parents stated that the child's activity is determined by the specifics of the interaction between parents and children, and if these relations are disharmonious, then difficulties in the relationship are inevitable. Analyzing the relationship between parents and children from the position of the first, it should be noted that no statistically significant results were obtained. But let's outline a few trends that we observed after the implementation of the project. On the "Cooperation" scale, high values are stated. Cooperation is a consequence of the child's involvement in interaction, reflects equality and partnership in relations with adults. Also, 60% of the group have high scores on the "Educational confrontation" scale, which indicates parental anxiety for the child and a possible disagreement between family members on issues of education, causing confrontation within the family. In the group of 40% of parents, low scores on the Demanding and Severity scales (20-30 points) are inherent, with a high score on the Consistency scale. And the other 40% have a high score on the "Strictness" scale, a low score on the "Demanding" and "Consistency" scales. In this case, there is a danger of ascertaining the low importance of order and organization in relation to the structuring of family activity, the clarity and certainty of family rules and responsibilities. But in general, at the cognitive level, there is a decentering in the position of the parents participating in the project. Here are examples of quotations from reflective audio recordings of parents. A .: "I really liked that on the project you could look at your child from the outside ... he can say what he wants, do what he wants ... at home you won't hear or see this ... here the child speaks out. .. I was wondering ... oh, how can you do it ... the children are doing well ... everything is more difficult for parents. M: "I watched how my child reacted and how other children reacted.

I love to analyze... ...learned other forms of interaction with a child...it was very valuable for me and for my family." A: "I realized that I need to study with M ... I devote little time to him."

Analyzing the scripts of animated films (children were the main scriptwriters), it is worth noting several storylines that testify to the significant values for the children-participants. In most cases (60%), friendship saved the heroes in difficult relationships (hedgehogs, donut-bagel, minion). 20% of the participants built the film on the basis of a violation of prohibitions, but the attention and care of another (for example, the hero - a hedgehog) saved them from inevitable death. As you can see, support in difficult situations, the desire for dialogism turned out to be significant for almost all children.

As a result of the project, the following changes in the relationship between parents and children are confirmed:

- expansion of forms of cooperation - redistribution of responsibilities, agreements, compromises (for example, from the reflection of the mother-participant: "instead of threats, you can switch to another type of activity");
- the dynamics from control to cooperation (for example, from the reflection of the mother-participant: "I accepted that my daughter can already walk to the store on her own and we can negotiate with her");
- the implementation of various options for joint activities (parents began to plan joint walks with their children, discuss family traditions and the possibility of their revival; for example, a quote from a participant: "I fought so hard to develop independence in her, but in the end she appeared on the project, I completely I didn't expect it, and yes, we use gadgets less, because on weekends we try to invent joint leisure activities for the whole family... whether it's going to the cinema, a museum, or just a walk on the Saimaa").

In general, characterizing the dynamics of the involvement of children and parents in work, the following lines can be distinguished:

- from a high level of control over the process of the child's activity to a joint distribution of role positions, which was demonstrated in the process of joint co-creation when choosing a fairy tale, formulating an idea, building a script;
- expansion of forms of cooperation both with adults and with other children (dialogue in the context of the work under discussion, voicing the hero, self-presentation and presentation of the family);
- a variety of productive activities contributed to the development of a range of game forms (children were in various role-playing positions);
- reducing the manifestation of excessive involvement in the use of gadgets.

The super-task formulated for the project participants allows creating a special space in which a number of psychological difficulties, both interpersonal and subjective, are solved. It is in the joint activity in solving the problem - the creation of an animated film, that the rethinking, discovery and alignment of the hierarchy of interests, desires, and abilities of children takes place. In addressing the issue of minimizing immersion in the digital world, it is important to demonstrate a palette of other scenarios of interaction between parents and children, ways of expressing emotions and, in general, life goals.

Conclusion

As a result of the project, we can note changes in children in the following areas:

– cognitive (participants are actively involved in the dialogues of parents, children could express disagreement and justify it);
– emotional (in general, there were no significant changes, only one of the participants, according to the mother at home, began to calmly turn off the phone at her request);
– behavioral (increase in the frequency of cases of initiative, joint games with peers, increase in tactile contacts with mothers).

Thus, due to the variety of means of interaction of the child with peers and parents, the project showed a decrease in computer addiction in the following parameters: a decrease in the time spent at the computer, gadgets; an increase in the use of gadgets by children as a means of implementing any activity (not for entertainment); increasing the level of communication with peers; expanding the idea of options for joint activities with parents and their own pastime; an increase in situations in which children are oriented towards a dialogue with their parents; no negative reaction to the request to turn off the computer (phone).

One of the tasks of further work is to build a holistic system for organizing family activities, which presents a palette of creative opportunities for joint activities of the child and parents, which will contribute to the rethinking of digital technologies and reduce the involvement in the use of gadgets by both children and parents.

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Author Contribution

Natalia Ivanovna Khokhlova - organization and management of the study.
Olga Yurievna Muller - preparation of the research base.

Lyubov Vladimirovna Savostina - implementation of the study and processing of results.

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Information about the conflict of interest

The authors declare no conflict of interest.