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Development of attention as a pedagogical condition for improving the academic performance of fourth-grade students

Формирование внимания как педагогическое условие повышения успеваемости учащихся четвертых классов

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Аннотация

Приоритетной целью образования в современной школе становится развитие личности, обладающей высокоразвитыми взаимосвязанными познавательными процессами. Цель – выявить особенности взаимосвязей между свойствами внимания и успеваемостью учащихся четвертых классов, обусловленных образовательным процессом в условиях пандемии COVID-19, разработать программу развития внимания и составить соответствующие методические рекомендации. Констатирующий эксперимент проведен на базе МБОУ СОШ № 21 г. Озерска Челябинской области (N = 70 человек, из них 28 учащихся четвертых классов: 15 девочек, 13 мальчиков) с помощью трех тестов («Запомни и расставь точки» Р. С. Немова, тест Пьерона – Рузера, «Таблицы Шульте»), диагностики успеваемости по электронному журналу и таблице, коэффициента ранговой корреляции Ч. Э. Спирмена. Результаты показали, что низким и ниже среднего уровнями концентрации, устойчивости и объема внимания обладают более трети учащихся (36%). Вычисление коэффициента ранговой корреляции Ч. Э. Спирмена подтвердило прямые корреляционные связи (высокий уровень свойств внимания коррелирует с высокими показателями учебной успеваемости). Проведение констатирующего эксперимента и последующий анализ полученных результатов позволили разработать программу (20 занятий по два занятия в неделю) и составить психолого-педагогические рекомендации по развитию свойств внимания учащихся четвертого класса. Цель программы – развитие свойств внимания (устойчивости, концентрации, объема) учащихся четвертого класса. Задачи программы – развивать свойства внимания, навыки умственного труда, мелкую моторику рук, способность концентрироваться и настойчивость. Содержание программы определено на основе преемственности содержания такой же программы для старших дошкольников. Методические рекомендации включают несколько интегративных направлений педагогической деятельности (отбор упражнений, создание педагогических условий их реализации, создание благоприятного психологического климата, индивидуальная работа с учащимися, организация комплексной совместной работы педагогов и родителей).

Ключевые слова

учащиеся четвертого класса, успеваемость, концентрация внимания, объем внимания, устойчивость внимания, программа развития внимания, методические рекомендации

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Abstract

The priority goal of education in a modern school is the development of a person with highly developed interrelated cognitive processes. Purpose: to identify the characteristics of the relationship between the properties of attention and the academic performance of fourth grade students, conditioned by the educational process in the context of the COVID-19 pandemic, to work out a program for the development of attention and draw up appropriate methodological recommendations. The ascertaining experiment was carried out on the basis of the secondary school No. 21 in Ozersk, Chelyabinsk region (N = 70 people, of which 28 students of the fourth grade: 15 girls, 13 boys) using three tests ("Remember and dot" by R. S. Nemov, Pieron-Ruser test, "Schulte Tables"), diagnostics of academic performance in the electronic journal and report card, rank correlation coefficient by Ch. E. Spearman. The results show that more than a third of students (36%) have low and below average levels of concentration, stability and attention span. The calculation of the rank correlation coefficient by Ch. E. Spearman confirmed direct correlations (high level of attention properties correlates with high academic performance). Carrying out an ascertaining experiment and subsequent analysis of the results obtained made it possible to work out a program (20 lessons, 2 lessons per week) and draw up psychological and pedagogical recommendations for the development of the attention properties of fourth-grade students. The purpose of the program: the development of the attention properties (stability, concentration, span) of fourth-grade students. The objectives of the program: to develop the properties of attention, mental skills, fine motor skills of the hands, perseverance and the ability to concentrate. The content of the program is determined on the basis of following after the content of the same program for preschoolers. Methodological recommendations include several integrative areas of pedagogical activity (selection of exercises, creation of pedagogical conditions for their implementation, creation of a favorable psychological climate, individual work with students, organization of complex joint work of teachers and parents).

Key words

fourth-grade students, academic performance, attention concentration, attention span, attention stability, attention development program, methodological recommendations

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Введение / Introduction

The priority goal of education in a modern school is the development of a person ready for effective interaction with the world, for self-education and self-development. Therefore, the requirements of the Federal State Educational Standard for primary general education state that the educational process is moving from traditional education to the formation of personal traits necessary for the full development of the child in a modern mobile society.

The mobile society gives a modern school as one of the most important tasks to solve an increase in the indicators of the students' cognitive activity. The most significant is the solution of this problem at the level of primary education, since it is at this age that cognitive learning abilities and cognitive spontaneity of educational activity are formed, the processes of cognition become voluntary and intelligent. The formation of the foundations of the ability to learn and the ability to organize one's activity involves: the ability to determine and keep goals in focus, as well as achieve them in the educational process, plan, implement and control, evaluate the results of work, cooperate with the teacher and peers in the learning process [1, 2].

The ability to learn is a part of the personal characteristics of a primary school student and contributes to the formation of a "portrait of a primary school graduate" [3], and the mechanisms of the progress and the level of development of such cognitive processes as perception, thinking and memory depend on the properties of attention.

The purpose of the research presented in the article is *to identify the characteristics of the relationship between the properties of attention and the academic performance of fourth grade students, conditioned by the educational process in the context of the COVID-19 pandemic, to work out a program for the development of attention and draw up appropriate methodological recommendations.*

Обзор литературы / Literature review

There are several approaches to studying and explaining the phenomenon of attention. For example, P. Ya. Galperin and representatives of his school consider attention to be one of the fragments of a person's orienting-research activity [4]. T. A. Ribot considers this mental process as a result of emotions: attention is always associated with emotions and it is caused by them [5]. A. Ya. Abkovich, based on an analysis of approaches to the study of attention in Russia and abroad, concludes that attention is a manifestation of an attitude: an attitude to be attentive to a certain object of reality [6]. R. S. Akbasheva in her works notes that the level of attention properties affects the development of all cognitive processes in children during schooling [7]. J. Song emphasizes the role of attention in motor control and learning [8]. The flexibility of attention and prioritization improve long-term memory according to J. Sandrya, M. D. Zuppichinib, T. J. Ricker, [9]. Long-term memory and attention are connected by mutual feedback, purposefully enhancing behavioral effects, writes D. E. Hannula, [10]. But L. Dunne and B. Opitz specify that attention control processes aimed at completing tasks can also occur due to random memory coding [11]. An encyclopedic definition regarding the importance of attention in the development of a child was made by M. L. Courage, J. E. Richards [12].

At primary school age, attention, like other mental processes, undergoes significant changes. This is due to the fact that children entering school are included in new types of activities and systems of interpersonal relations that require them to have new psychological qualities. The educational process demands voluntary attention of children in terms of the ability to control their actions, work without distraction, compare the result with the goal, and follow the instructions. According to E. Isbella, S. D. Calkinsa, M. M. Swinglerb, E. M. Leerkes, it is precisely because of the low level of attention properties development that primary school students often experience difficulties in the learning process. And this significantly reduces their cognitive activity and leads to academic failure [13].

Attention is a psychological phenomenon concerning which there is no consensus among researchers. The issue of the existence of attention as an independent mental phenomenon is being discussed in the psychological literature. E.Yu. Brunner believes that attention cannot be considered as an independent phenomenon, because it is present to some

extent in any other mental process [14]. S. A. Vologirova, M. A. Anaev, on the contrary, defend the independence of attention as a mental process [15].

D. V. Fonarev, E. A. Fonareva explain the ongoing discussion about which class of mental phenomena to attribute attention to (to cognitive mental processes or to the sphere of human will and activity) by the fact that any activity, including cognitive one, is impossible without attention, and attention itself requires certain volitional efforts [16]. When we speak about the development of attention in children, we mean the improvement of the attention properties reflecting the features of its manifestation: these are attention span, concentration, distribution, switchability and stability.

The age characteristics of primary school children are the relative weakness of voluntary attention and its low stability, so it is quite difficult for them to focus their attention on monotonous and uninteresting activities. However, modern researchers O. P. Bartosh, T. P. Bartosh, M. V. Mychko confirm that primary school students can already plan their activities independently to some extent [17].

The level of attention depends on many factors, for example, on the interaction of children with nature. According to the results of an experiment conducted by P. Lindemann-Matthies, D. Benkowitz, F. Hellinger [18], students (N = 785; 8–11 years old; all 4th graders) experience less stress and are more focused on completing tasks in classrooms with more natural window views. Children's connection with nature (measured as time spent in nature and in the process of caring for plants) positively correlates with a sense of comfort and satisfaction with school.

The state of attention is influenced by the meditative properties of not only nature but autogenic training as well. In the work of J. M. Guiote, V. Lozano, M. A. Vallejo, B. Mas [19], Spanish students (N = 70) were divided into three groups: with training in autogenic meditation, with training in natural reading (active control) and a waiting list (passive control). The results of a 12-week study showed that children randomly assigned to learn autogenic meditation had significantly greater improvements in selective and sustained attention, reduced anxiety about their condition and traits, and improved overall mental health as compared with children randomized to learn natural reading or in a waiting list. These data suggest that autogenic meditation training provides an acceptable approach to improving attention, reducing anxiety, and improving the mental health profile in children.

Due to importance of attention and executive functions in the behavior of children, the autogenic training programs of the authors T. Rossignoli-Palomeque, E. Perez-Hernandez, J. Gonzalez-Marques [20], aimed at the development of these processes, are quite interesting (N = 108). Similar metacognitive therapy programs worked out by T. A. Fergus, C. A. Limbers [21] also contribute to the improvement of attention, which is confirmed by an experiment in which students were divided after completing basic training activities depending on the period of classes into five sessions of auto-training (N = 39) or for listening to music (N = 34), held in a group format during the school week.

All these programs are associated with the development of emotional stability of students, the same effect on attention is produced by a healthy sleep of schoolchildren. We were lucky to come across an interesting study of the relationship between attentional difficulties and pre-bedtime media use and sleep characteristics, including time in bed, delayed sleep onset and daytime sleepiness, as well as the associations between pre-bedtime media use and sleep variables which was made by S. Ruhland and K. W. Lange [22]. The authors' results (N = 345) prove an interrelation between pre-sleep media use and poor sleep, and increased daytime sleepiness is associated with greater difficulty in controlling attention.

Physical activity development programs proposed by S. Ruhland and K. W. Lange also contribute to positive changes in the attention and behavior of school-age children. In general, the data presented by H. Leonard, A. Khurana, M. Hammond [23] demonstrate the beneficial effect of physical exercises on attention and behavior when performing tasks in the classroom. However, when comparing the results, methodological differences regarding participants, duration and type of physical activity should be taken into account. O. A. Verzenkova also speaks about taking into account the peculiarities of attention development in the educational activities of primary school children [24].

Innovative technologies for developing the attention of primary school students include the use of multimedia tools, such as a multimedia presentation, an interactive whiteboard, and a developing simulator. An experimental study of their effectiveness was carried out by V. G. Evstigneeva [25].

Thus, all programs and recommendations involve the work on the development of emotional stability of primary school students. We also share this approach (V. Dolgova, O. Kondratyeva, G. Golieva, Ju. Rokitskaya, I. Khokhlova, 2019 [26]; V. Dolgova, Ju. Rokitskaya, A. Bogachev, N. Kryzhanovskaya, 2019 [27]).

The analysis of domestic and foreign theoretical works allows us to speak about the agreement of scientists regarding the influence of attention on the mechanisms of functioning and development of such cognitive processes as perception, thinking, memory. Therefore, the success in mastering the primary school educational program will depend on how attentive the students are in the lessons. The analysis made did not reveal any serious disagreements in the selection of methods and generalization of the results of our study obtained with their help. In addition, this analysis helped, after conducting the ascertaining experiment, to prepare a program and psychological and pedagogical recommendations for developing the properties of fourth-grade students' attention.

Методологическая база исследования / Methodological base of the research

The hypothesis of the study was based on the assumption that there is a relationship between the properties of attention and the performance of fourth grade students: a high level of attention properties correlates with high academic performance.

The study of the relationship between the properties of attention and the performance of fourth-grade students took place in three stages.

At the search and preparatory stage, the research problem was formulated and substantiated, its relevance was determined, the specialized psychological and pedagogical literature on the research topic was studied, tasks were set and the subject and object of the research were determined, the analysis of scientific and scientific-methodological literature was made and the selection of methods was done to determine the level of the research object, taking into account age characteristics.

At the experimental stage, an ascertaining experiment was organized, diagnostics of the attention properties of fourth grade students was carried out by means of selected methods, diagnostics of academic performance according to an electronic journal and a report card, the relationship between the properties of attention and the academic performance of fourth grade students was examined by calculating the rank correlation coefficient of Ch. E. Spearman.

At the control and generalizing stage, the analysis and generalization of the data obtained during the experimental work were carried out, the results of the study were system-

atized, appropriate conclusions and hypotheses were formulated, programs were developed and psychological and pedagogical recommendations for teachers and parents on the development of the properties of attention of fourth grade students were compiled.

Research methods and techniques used [28, 29]:

1. Theoretical methods: analysis of psychological and pedagogical literature on the research problem, generalization of information.
2. Empirical methods: experiment, testing according to R. S. Nemov's "Remember and dot" method, Pieron-Ruser test, "Schulte Tables", examination of educational documentation (class register, report card, electronic journal "Network City. Education").
3. Mathematical and statistical: the method of rank correlation by Ch. E. Spearman, calculation of the average academic performance score.

The study of the attention properties was carried out on the basis of the secondary school No. 21 in Ozersk, Chelyabinsk region with students of grade 4 "A". It involved 28 students, 15 girls and 13 boys, all children were born in 2009-2010. Students were brought up in families where parents pay due attention to their children. There were no delinquent children.

The experimental group of students was chosen due to the fact that they turned 10-11 years old in the fourth grade. This is a difficult period, since children become aware of moral values at this age, there are changes in the development of attention which children begin to manage. The physical development of children corresponded to their age, but there were children who often got colds and missed classes. These children needed special care and control of their health status.

There was a friendly team in the class. Children shared each other's interests, they worried about the failures and problems of their classmates, and tried to lend a helping hand to them. Several people in the class required increased attention. They studied reluctantly, lacked interest in learning, were passive in the classroom, lost attention, needed the help of a teacher and constant control. Learning motivation of students was at different levels.

All students in the class were covered by various types of extracurricular activities and were active in conducting classroom and school activities. Teachers characterized the class as predominantly with an average intellectual level. One student had an "excellent" grade and two students had a "bad" grade in mathematics. There were minor disciplinary issues.

The general level of development of students was average, their interests were diverse. Teachers worked to form public opinion in this class, children learned to express their opinions, attitude to the actions of some students, evaluate the work of friends, etc.

Результаты исследования / Research results

To study the progress of students in grade 4 "A", diagnostics was carried out. The students passed the final examinations for the six months in the subjects: mathematics, literary reading, Russian language, surrounding world. Based on the results of tests and current grades, the teacher summed up the results for each subject, formed the average score of the student's progress. An analysis of the results of student performance for the first half of the 2020-2021 academic year allows us to conclude that the level of students' knowledge quality ranges from high to below average (Figure 1).

To study the properties of attention of the 4th "A" class students, diagnostics of concentration, stability and volume of attention was carried out according to the methods: the Pieron-Ruser test, "Remember and dot" by R. S. Nemov, "Schulte Tables". The results of the study are presented in the form of diagrams, where the vertical line indicates the number of subjects in %, and the horizontal line indicates the level of attention development.

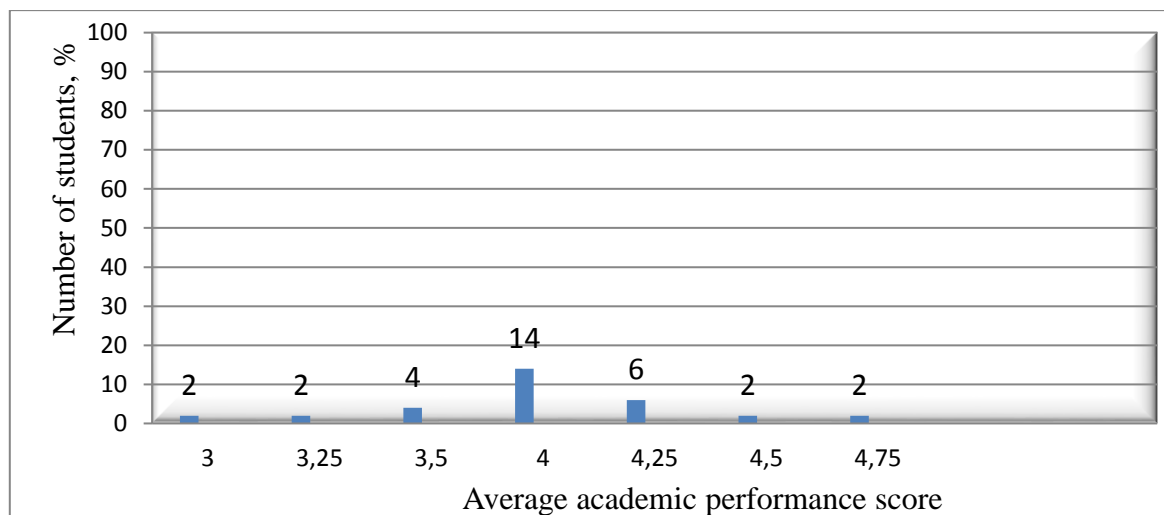


Figure 1. Results of calculating the average academic performance score

The results of the study of the attention concentration development level in fourth graders according to the Pieron-Ruser test are presented in Figure 2.

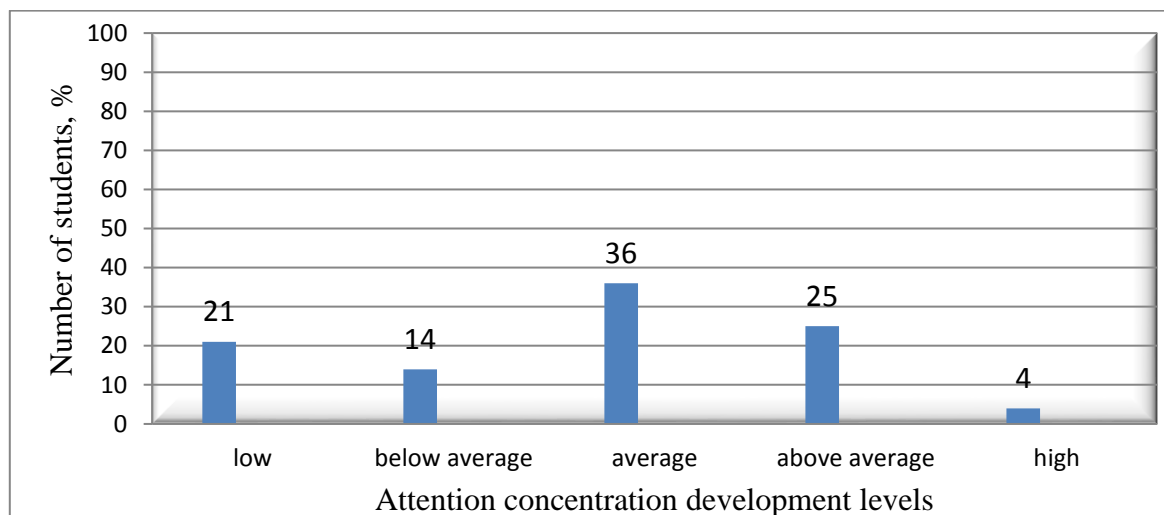


Figure 2. The results of the study of the attention concentration development level of fourth grade students according to the method of Pieron-Ruser

In the course of quantitative data processing and qualitative analysis of the results, it was revealed that most of the subjects had an average level of 36% (10 people) and a level above the average of 25% (7 people), that is, the concentration of attention is developed normally. 21% of respondents (6 people) had a low level of concentration, and 14% (4 people) – below average. Fourth-graders with low and below average levels are extremely restless, rarely focus on objects and phenomena. 4% of students (1 person) had a high level of concentration, that is, it is easy for him to focus on an object, action or phenomenon. Let us further calculate the rank correlation coefficient of E. Ch. Spearman between the indicators of the properties of attention and the performance of fourth grade students according to the formula for calculating the sum of ranks (graphical interpretation is shown in Figure 3):

$$\sum(R)_p = \frac{28(28+1)}{2} = 406$$

Hypotheses:

H₀: the correlation between attention concentration and average academic performance score does not differ from 0;

H₁: the correlation between attention concentration and average academic performance score is significantly different from 0,

where A is an indicator of attention concentration, B is the average academic performance score.

Then, it is necessary to rank both indicators, assigning a lower rank to the smaller value, and then calculate the differences between the ranks that each subject received in two variables, and square these differences.

We calculate the empirical value r_s :

$$r_s = 1 - 6 \frac{113,5 + 5 + 28}{28(28^2 - 1)} = 1 - 6 \frac{146,5}{21924} = 1 - \frac{879}{21924} = 1 - 0,04 = 0,96$$

where $\sum d^2$ is the sum of the squares of the difference between the ranks;

T_a and T_b - adjustments for the same ranks of attention concentration and academic performance;

N - the number of participants in the ranking.

The resulting empirical value of r_s is close to 1. Let's find the critical values of r_s for N = 28 according to the table:

$$r_{s \text{ кр}} \text{ для } N = 28 \begin{cases} 0,38 (p \leq 0,05) \\ 0,48 (p \leq 0,01) \end{cases}$$

$$r_{s \text{ эм}} > r_{s \text{ кр}}$$

$$r_{s \text{ эм}} > 0,97 \text{ (at the level of significance 0,01)}$$

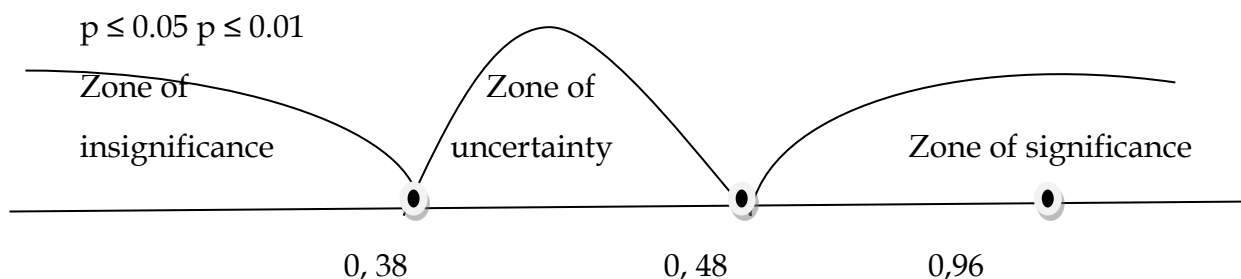


Figure 3. Significance axis

We presume H₁: the correlation between the concentration of attention and the academic performance of schoolchildren is significantly different from 0 and is positive. From the evaluation of the correlation analysis data, it follows that the correlation between the concentration of attention and the academic performance of schoolchildren is significant, direct, that is, high concentration of attention corresponds to high performance indicators.

The results of the study of the attention stability development level in fourth-graders according to the method of "Schulte Tables" are presented in Figure 4.

In the course of quantitative data processing and qualitative analysis of the results, it was revealed that most of the subjects had an average level – 39% (11 people) and a level above the average – 18% (5 people), that is, attention stability is developed normally. 7% of respondents (2 people) had a low level of attention stability, and 29% (8 people) had below average level. Fourth graders with low and below-average levels often retained attention only for a short time. 7% of respondents (2 people) were characterized by a high level, that is, the stability of attention was well developed.

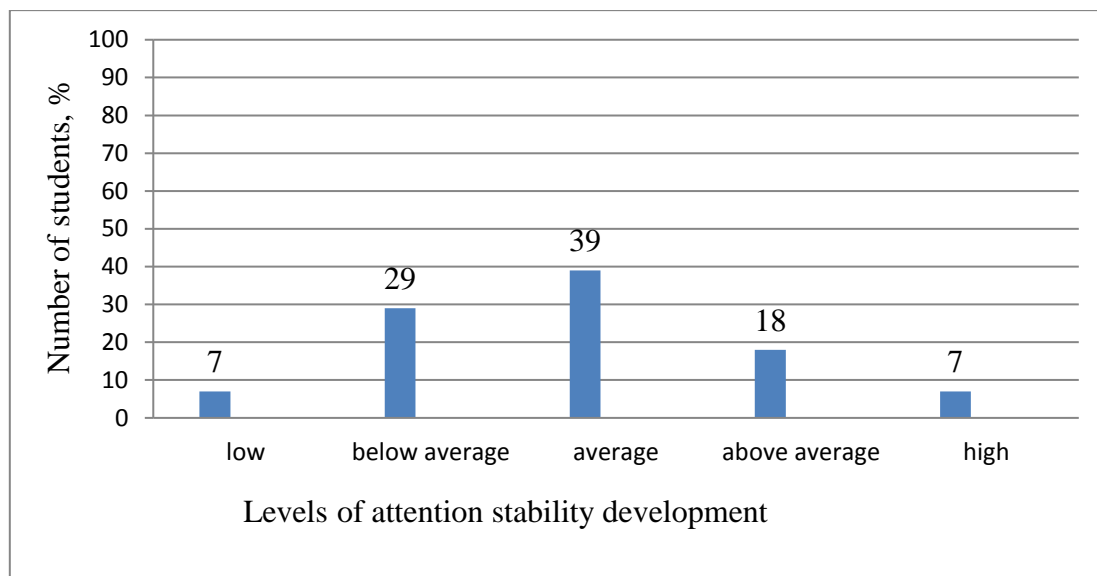


Figure 4. The results of the study of the development of attention stability of fourth grade students according to the method of "Schulte Tables"

Let us find the correlation between the indicators of attention stability and the average score of academic performance by analogy with the correlation between concentration of attention and academic performance (graphical interpretation is presented in Figure 5).

H_0 : the correlation between the indicators of attention stability and the average academic performance score does not differ from 0;

H_1 : the correlation between the indicators of attention stability and the average score of academic performance significantly differs from 0,

where A is the indicator of attention stability, B is the average score of academic performance.

$$r_{s \text{ кр}} \text{ для } N = 28 \begin{cases} 0,38 (p \leq 0.05) \\ 0,48 (p \leq 0.01) \end{cases}$$

$$r_{s \text{ эмп}} > r_{s \text{ кр}}$$

$$r_{s \text{ эмп}} > 0,97 \text{ (at the level of significance 0,01)}$$

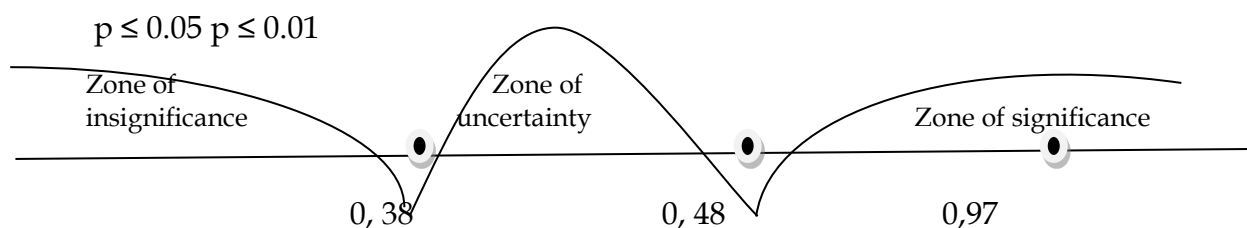


Figure 5. Significance axis

We presume H_1 : the correlation between the stability of attention and the academic performance of schoolchildren is significantly different from 0 and is positive. From the evaluation of the correlation analysis data, it follows that the correlation between the stability of attention and the academic performance of schoolchildren is significant, direct, that is, high stability of attention corresponds to high performance indicators.

The results of the study of the attention span development level in fourth graders by the method of "Remember and dot" by R. S. Nemov are shown in Figure 6.

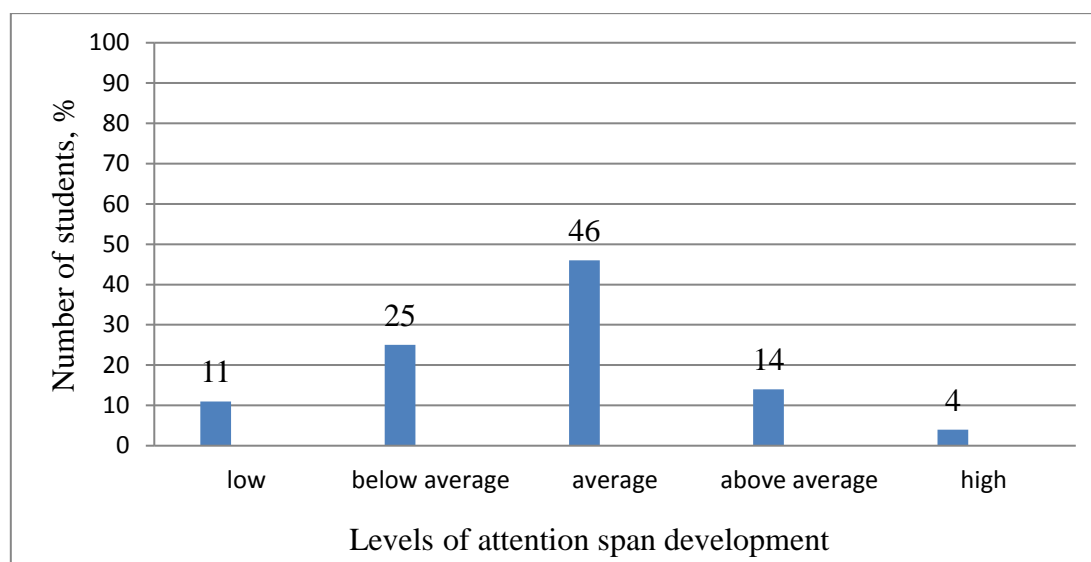


Figure 6. The results of the study of the attention span development level in fourth graders by the method of "Remember and dot" by R. S. Nemov

In the course of quantitative data processing and qualitative analysis of the results, it was revealed that most of the subjects had an average level of 46% (13 people) and an above-average level of 14% (4 people), that is, the attention span is developed at a sufficient level. 11% of respondents (3 people) had a low level of attention, and 25% (7 people) – below average. Fourth graders with low and below-average levels kept attention for a short time. 4% of students (1 person) were characterized by a high level of attention, that is, they were able to cover a large number of objects at the same time.

Let us find the correlation between the attention span indicators obtained using the "Remember and dot" method by R. S. Nemov and the average score of academic performance (Figure 6).

Hypotheses:

H₀: the correlation between attention span indicators and the average score of academic performance does not differ from 0;

H₁: correlation between attention span and the average score of academic performance is significantly different from 0,

where A is an indicator of the attention span, B is the average score.

$$r_{S \text{ кр}} \text{ для } N = 28 \begin{cases} 0,38 (p \leq 0,05) \\ 0,48 (p \leq 0,01) \end{cases}$$

$$r_{S \text{ эмп}} > r_{S \text{ кр}}$$

$$r_{S \text{ эмп}} > 0,95 \text{ (на уровне значимости 0,01)}$$

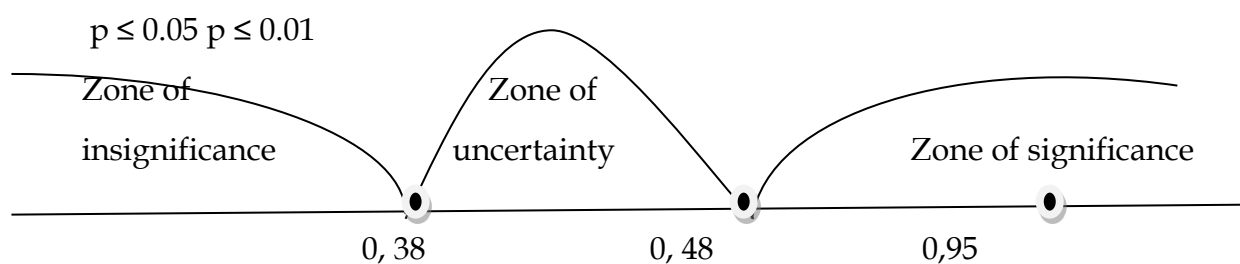


Figure 6. Significance axis

We assume H₁: the correlation between the attention span and academic performance of schoolchildren is significantly different from 0 and is positive. From the evaluation of the correlation analysis data, it follows that the correlation between the attention span and the

academic performance of schoolchildren is significant, direct, that is, a high level of attention span corresponds to high performance indicators.

Conducting an ascertaining experiment and subsequent analysis of the data obtained made it possible to work out a program and make psychological and pedagogical recommendations for the development of attention properties in fourth grade students.

The purpose of the program is to develop the properties of attention (stability, concentration, span) in fourth grade students.

Objectives of the program: to develop the properties of attention, mental skills, fine motor skills of hands, the ability to concentrate and persistence.

The content of the program is determined on the basis of the continuity of the same program content for preschoolers, tested in 2016 and implemented subsequently [30].

The program of psychological and pedagogical correction consists of 20 classes (2 classes per week). Classes are conducted by a teacher and a psychologist. Here is an example of one of the classes.

Topic: "Development of attention properties"

The structure of the lesson: psychogymnastics, games and tasks for the development of auditory perception and attention, games and tasks for the development of visual perception and attention, games and tasks for the development of motor attention, general and fine motor skills.

I. 1. The game "Brooklet" (the goal is to create a cheerful mood). 2. The game "What do you hear?" (the goal is to develop auditory attention). 3. The task "Find two identical objects" (the goal is the development of sensory attention, attention span). 4. The game "Who flies?" (the goal is to develop motor attention). 5. The task "Lay out using the sticks" (the goal is the development of voluntary attention and fine motor skills of hands).

II. 1. The game "Brooklet" (the goal is to create a cheerful mood). 2. The game "Listen to the sounds" (the goal is to develop auditory attention). 3. The task "Find five differences" (the goal is the development of voluntary attention, switching attention). 4. The game "Who flies?" (the goal is to develop motor attention). 5. The task "Put the mosaic pieces together" (the goal is the development of concentration and attention span, fine motor skills of hands).

III. 1. The game "Brooklet" (the goal is to create a cheerful mood). 2. Exercise "Exclusion of superfluous" (the goal is the development of sensory attention, attention span). 3. The game "Recognize by voice - 1" (the goal is the development of auditory attention). 4. The task "Lay out using the sticks" (the goal is the development of voluntary attention and fine motor skills of hands). 5. The game "To new places" (the goal is to develop motor attention).

IV. 1. The game "Brooklet" (the goal is to create a cheerful mood). 2. The task "Put the mosaic pieces together" (the goal is the development of concentration and attention span, fine motor skills of hands). 3. The game "Owl" (the goal is the development of voluntary attention, the development of endurance). 4. The task "Find two identical objects" (the goal is the development of sensory attention, attention span). 5. The game "To new places" (the goal is to develop motor attention).

V. 1. The game "Brooklet" (the goal is to create a cheerful mood). 2. The task "Lay out using the sticks" (the goal is the development of voluntary attention and fine motor skills of hands). 3. The game "Recognize by voice - 2" (the goal - development of auditory attention). 4. The task "Find five differences" (the goal - development of voluntary attention, switching attention). 5. The game "To new places" (the goal is to develop motor attention).

VI. 1. The exercise "Look at your hands" (the goal is the development of active voluntary attention). 2. The exercise "Put the mosaic pieces together" (the goal is to develop concentration and attention span, fine motor skills of hands). 3. The game "Owl" (the goal -

development of attention and endurance). 4. The task "Find two identical objects" (the goal is the development of sensory attention, attention span). 5. The task "Find all the differences" (the goal is the development of voluntary attention, switching attention). 6. The game "Be careful" (the goal is the development of voluntary attention, speed of reaction).

VII. 1. The exercise "Look at your hands" (the goal is to develop active attention). 2. The task "Find two identical objects" (the goal is the development of visual perception and attention, the attention span). 3. The task "Find five differences" (the goal is the development of voluntary attention, switching attention). 4. The game "Owl" (the goal is the development of attention, the development of endurance).

Methodological recommendations for the development of attention properties of fourth-graders may include several integrative areas of pedagogical activity [31]: selection of exercises for the purposeful formation of attention properties, taking into account the content of educational material and individual characteristics of students; creation of pedagogical conditions for the implementation of selected techniques that provide a positive psychological microclimate in the classroom, the productivity of each student's educational activity, the desire of students to achieve a learning result. Teachers should introduce interactive forms of work in the classroom, colorful illustrations, entertaining stories, video materials, and presentations should be used. It is necessary to systematically work individually with low-performing students, to organize a comprehensive joint work of teachers and parents.

Teachers should advise parents to perform different types of tasks with children, familiar from preschool age: drawing patterns in cells, drawing sketches based on a sample (copying), crossing out (underlining) given letters from the text, searching exit from the labyrinths (by pictures), coding (placement of signs in figures according to a given pattern).

Parents must actively participate in the development of their children's attention: use educational books and games that increase attention; ask help from specialists (teachers-defectologists, pedagogues-psychologists); play outdoor games with children, thanks to which you can develop all the properties; teach children to observe; spend more time communicating with the child at home; to stimulate interest in the development of attention by their own examples.

Заключение / Conclusion

Functioning and the development level of such cognitive processes as perception, thinking and memory depend on the properties of attention. Purpose: to identify the characteristics of the relationship between the properties of attention and the academic performance of fourth grade students, conditioned by the educational process in the context of the COVID-19 pandemic, to work out a program for the development of attention and draw up appropriate methodological recommendations. The ascertaining experiment was carried out on the basis of the secondary school No. 21 in Ozersk, Chelyabinsk region (N = 70 people, of which 28 students of the fourth grade: 15 girls, 13 boys) using three tests ("Remember and dot" R. S. Nemov, Pieron-Ruser test, "Schulte Tables"), diagnostics of academic performance in the electronic journal and report card, rank correlation coefficient by Ch. E. Spearman.

The results show that more than a third of students (36%) have low and below average levels of concentration, stability and attention span. The numerical data obtained using the "Remember and dot" method by R. S. Nemov indicate that 46% of students have an average level of attention span, 25% below average, 11% low, and 4% high. The data found using the Pieron-Rusen test confirm the dominance of the average level of attention concentration (36%), a low level is found in 21% of students, below average – in 14%, high – in 4%. The

predominance of the average level of attention stability (39%) is also proved by the results collected according to the method of "Schulte Tables", the level below the average is demonstrated by 29% of students, low and high – by 7% of students.

The calculation of the rank correlation coefficient by E. Ch. Spearman confirmed direct correlations: a high level of attention properties correlates with high academic performance.

The ascertaining experiment and subsequent analysis of the results obtained made it possible to work out a program (20 lessons, 2 lessons per week) and make psychological and pedagogical recommendations for developing the attention properties of fourth-grade students.

The purpose of the program: the development of the attention properties (stability, concentration, span) in fourth-grade students. Program objectives: to develop the properties of attention, mental skills, fine motor skills of hands, the ability to concentrate and persistence. The content of the program is determined on the basis of the continuity of the same program content for preschoolers.

Methodological recommendations include several integrative areas of pedagogical activity (selection of exercises, creation of pedagogical conditions for their implementation, creation of a favorable psychological climate, individual work with students, organization of complex joint work of teachers and parents).

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