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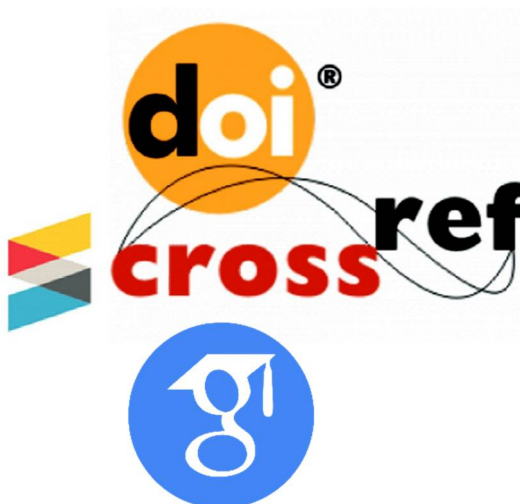
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БИОМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ

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HYGIENIC ASSESSMENT OF THE ACADEMIC LOAD OF STUDENTS IN MODERN STATE AND PRIVATE SCHOOLS

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ABSTRACT

Objective of the study: To conduct a hygienic analysis of the weekly academic load of students in grades 5–9 of private and state schools in Tashkent. **Research materials:** Regulations for the daily and weekly educational process in private and state schools located in Tashkent. **Results:** It was found that a distinctive feature of modern school education is not only an increase in the volume and intensity of academic loads but also the extensive use of innovative pedagogical technologies. It is crucial to adhere to sanitary and hygienic requirements, including those not currently covered by existing regulatory frameworks. **Conclusions:** The analysis of educational processes and the organization of lesson schedules according to hygienic standards are essential for maintaining student health. Identifying the health impacts of educational innovations prior to their widespread implementation significantly reduces the risk of negative effects on the health of children and adolescents.

Keywords: academic load, lesson schedule, points, weekly classes.

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ГИГИЕНИЧЕСКАЯ ОЦЕНКА УЧЕБНОЙ НАГРУЗКИ УЧАЩИХСЯ СОВРЕМЕННЫХ ГОСУДАРСТВЕННЫХ И ЧАСТНЫХ ШКОЛ

АННОТАЦИЯ

Цель исследования: гигиенический анализ еженедельной учебной нагрузки учащихся 5–9 классов частных и государственных школ г. Ташкента. **Материалы исследования:** регламенты организации ежедневного и еженедельного учебно-воспитательного процесса в частных и государственных школах г. Ташкента. **Результаты исследования:** выявлено, что отличительной чертой современного школьного образования является не только увеличение объема и интенсивности учебных нагрузок, но и активное внедрение инновационных педагогических технологий. Подчеркивается важность соблюдения санитарно-гигиенических норм, в том числе параметров, не предусмотренных действующими нормативными документами. **Выводы:** гигиенический анализ учебного процесса и рациональная организация расписания являются необходимыми условиями сохранения здоровья учащихся.

Определение влияния образовательных инноваций на организм до их массового внедрения позволяет существенно снизить риск негативного воздействия на здоровье детей и подростков.

Ключевые слова: учебная нагрузка, расписание занятий, баллы, еженедельные занятия.

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DAVLAT VA XUSUSIY ZAMONAVIY MAKTAB O'QUVCHILARINI O'QUV YUKLAMALARINI GIGIYENIK BAHOLASH

ANNOTASIYA

Tadqiqotning maqsadi - Toshkent shahrida joylashgan xususiy va davlat maktab 5-9 sinf o'quvchilari haftalik o'quv yuklamasi gigiyenik tahlil qilish. **Tadqiqot materiallari:** Toshkent shahrida joylashgan xususiy va davlat maktabdagi o'quv jarayonining tashkillashtirilish kunlik va haftalik ta'lim- tarbiya jarayonlari reglamentlari **Tadqiqot natijalari:** zamonaviy maktab ta'limining o'ziga xos xususiyati nafaqat o'quv yuklamalarining hajmi va intensivligini oshirish, balki innovatsion pedagogik texnologiyalar va o'qitish usullaridan, shu jumladan sanitar gigiyenik talablar, amaldagi me'yoriy hujjatlarda nazarda tutilmagan talablardan foydalanish muximdir. **Xulosalar:** dars jarayonlarini tahlili, dars jadvallarini gigiyenik talablarda tashkillashtirish innovatsiyalarni gigiyenik baholashning dolzarbligi ularning maktablarda keng tarqalishidan oldin ularning sog'lig'ini saqlash ta'sirini aniqlash bilan bog'liq ta'lim faoliyati davomida ushbu texnologiyalarning bolalar va o'smirlarning sog'lig'iga salbiy ta'siri xavfini sezilarli darajada kamaytiradi.

Kalit so'zlar: o'quv yuklama, dars jadvali, ballar, haftalik mashg'ulotlar.

Relevance of the topic: In today's modern conditions, the correct organization of daily and weekly lessons for schoolchildren, the regulation of the duration of lessons and breaks, and rational organization ensure the correct, harmonious and comprehensive development of students' ability to work. It is important for schoolchildren to actively participate in children's health and educational processes by organizing lesson processes in accordance with hygienic requirements and organizing children's daily routines based on reasonable hygienic requirements. It has been scientifically proven that violation of hygienic requirements of students' lesson schedules and daily routines in schools has a negative impact on children's health. Therefore, in modern conditions, it is necessary to analyze the total load of daily and weekly lessons for schoolchildren and to study the lesson schedule and scientific research. These tasks are one of the urgent scientific directions of improving the educational conditions of children and adolescents, organizing lesson schedules and effective agendas in various educational organizations.

The purpose of the study is to conduct a hygienic analysis of the weekly curriculum of students in grades 5-9 of private and public schools located in Tashkent.

Research materials and methods. The organization of the educational process in private and public schools located in Tashkent was carried out on the basis of the regulations of daily and weekly educational processes and the normative document of the Ministry of Health and Social Development No. 0341-16 "Sanitary and epidemiological requirements for the conditions and organization of education in general schools". The organization of the educational process in the school was carried out on the basis of daily and weekly assignments of the education department. The analysis was carried out according to the following criteria: the beginning of school hours ; the size of the weekly educational (lesson) load; volume of the daily training load;

Research results and their discussion

In our country, among other things, there are tasks such as improving the quality of the educational process, reforming various educational institutions, improving and developing the quality of education and upbringing. These tasks are one of the current scientific directions for improving the educational conditions of children and adolescents in various educational organizations, public

schools and private schools, preventing the negative impact of factors on the educational process, and optimizing the effective schedule and hygienic learning processes .

The school has 6-day lesson schedules for middle and high grades. The structure of the lesson schedules of the classes in the public school and the distribution of the lessons by the level of complexity are presented in Table 1 below.

Of 5th graders in terms of scores showed that on Mondays and Fridays, the general lesson schedules included lessons with a high level of difficulty, that is, the total daily scores were 34 to 37 points. It is clear from the analysis of the weekly lesson schedules of 5th graders that on Fridays, the lesson load increased in difficulty and load, despite the fact that the difficulty level of the subject was the end of the week, while on Saturdays, the difficulty level of the lessons lasted 6 hours, and the difficulty level was 29 points.

Table 1

Color distribution of study hours of the public school in grades 5-9 during weekdays according to the level of severity (in points)

day	No.	5th grade	5th grade	6th grade	6th grade	7th grade	7th grade	8th grade	8th grade	9th grade	9th grade
Monday	1	1	1	1	1	1	1	1	1	1	1
	2	2	8	13	11	13	10	7	10	4	2
	3	8	4	8	13	10	2	8	8	7	6
	4	4	9	12	12	1	2	9	7	9	4
	5	10	10	11	3	10	10	10	9	6	9
	6	9		11	3	4	13	8	2	7	7
		34	32	56	43	39	38	43	37	34	29
Tuesday	1	10	10	8	11	2	10	7	8	8	2
	2	5	9	13	11	2	6	9	3	13	7
	3	7	2	11	13	6	2	8	8	2	8
	4	9	7	8	1	2	10	8	7	7	10
	5	3	10		8	10	6	2		10	7
	6					10	7			7	13
		34	38	40	44	32	41	34	26	47	47
Wednesday	1	9	8	8	11	10	4	8	8	8	7
	2	8	9	11	4	10	10	8	7	9	6
	3	10	10	1	4	10	10	3	8	7	9
	4	4	4	11	13	10	10	7	4	9	10
	5		4	13	12	6	4	2	8	10	7
	6		4	4		4	11		8	10	7
		31	39	48	44	50	49	28	43	53	46
Thursday	1	5	7	3	6	10	11	8	8	10	9
	2	8	3	3	8	8	10	7	8	12	3
	3	3	8	6	11	7	10	8	9	3	10
	4	9	5	12	12	11	1	6	10	7	10
	5	3	9	11		6	8	4	3	9	5
	6			3		10	2	7	6	2	6
		28	32	38	37	52	42	40	44	43	43
Friday	1	10	10	13	3	11	10	3	10	13	8
	2	4	3	10	11	2	6	8	6	6	9
	3	4	5	4	10	1	10	10	2	5	3
	4	10	9	6	13	13	3	1	7	7	12
	5	9	3	12	8	6	13	10	9	9	7
	6				4	10	1	9	1	3	5
		37	30	45	49	43	43	41	35	43	44

Saturday	1	9	1	12	8	7	6	9	7	6	13
	2	1	9	13	12	6	11	6	9	7	7
	3	8	8	8	11	11	8	10	7	7	12
	4	4	4	2	13	8	7	9	9	12	7
	5	7			2	4	4	4	4	5	9
	6					3	6	7	10		
		29	22	35	46	39	42	45	46	37	48

In the analysis of weekly class loads, Monday was 34 points, Tuesday was 34 points, Wednesday was 31 points, Thursday was 28 points, and Friday was 37 points, while Saturday was 29 points, which reduces students' ability to work on weekends and leads to disruption of the daily routine (Figure 1).

The workload of the 5th graders was unevenly distributed at the beginning and end of the week, especially on Friday, the workload was 37 points. This leads to changes in a number of functional states of the students' health [1]. Scientific sources indicate that the 37 points assigned on Friday cause severe fatigue and exhaustion in the students' body. [2. 4]

6th graders in terms of points, it was found that the difficulty level in the general lesson plans on Tuesdays and Wednesdays was 39 points. It is worth emphasizing that, taking into account that the days of the week that provide the highest working capacity are Wednesdays and Thursdays, and the lowest days are Mondays and Fridays, this leads to increased fatigue and attention deficit in children at the beginning and end of the week. When analyzing the daily and weekly workload of 6th graders in terms of points, it was found that the weekly workload was 43 points at the beginning and end of the week, and 46 points on Saturday, which does not meet the hygienic standard.

The level of complexity of the daily and weekly loads of the 7th class corresponds to hygienic requirements.

The level of complexity of the daily and weekly workloads of the 8th grade, when performing a hygienic analysis, the subjects in the lesson schedules correspond to the hygienic requirements during the day and week.

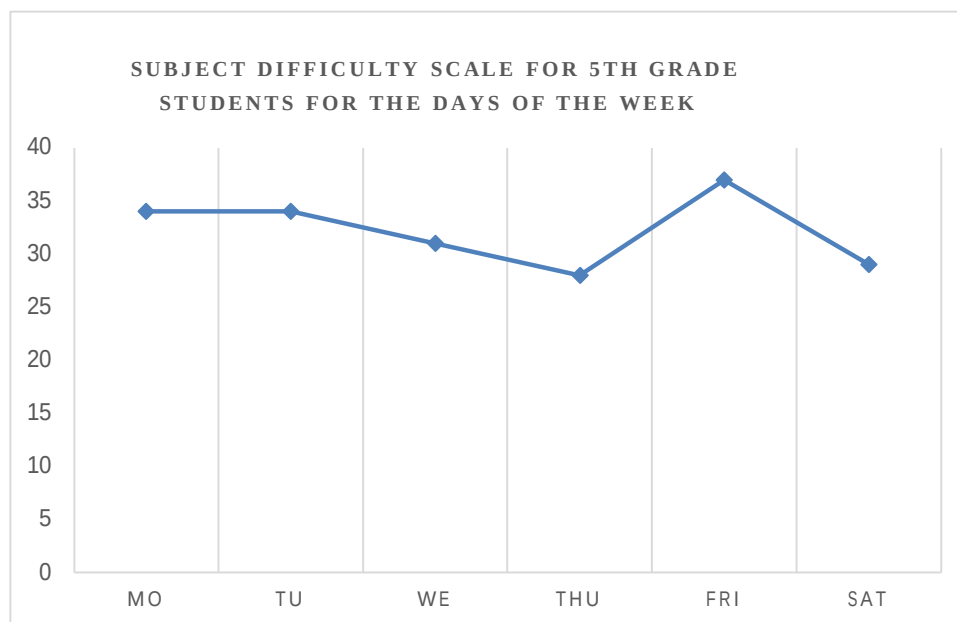


Figure 1. Dynamics of difficulty in hygienic analysis of the lesson schedule of 5th grade school students by days of the week

Urban students experience a higher intensity of the educational process than rural students. In general, the data obtained on the intensity of the educational process in subjects are consistent with the data of other researchers [3].

However, this study is the first to compare the difficulty of subjects with the intensity of the educational process, and it has identified the prospects for studying the true difficulty of subjects in the classroom and the hygienic scientific basis of academic subject scores.

Currently, the teaching processes of schoolchildren are constantly growing and improving, and intellectual labor activity is becoming more complex. Schools are developing at a stage of their development associated with new reforms. In this regard, improving the quality of educational work and organizing it effectively is of great importance. The weekly scores of secondary school students in grades 5-a and 2 were 193 points, in grades 6-a they were 262 points, and in grades 7-a and 255 points. Analysis of these weekly lesson schedules shows that the indicators are high workloads during the week, reducing the ability of students to work on weekends, as well as the loss of the daily routine, fatigue of varying degrees, and a number of functional changes in health [1.2.3.4.] Table 2 (Fig. 2)

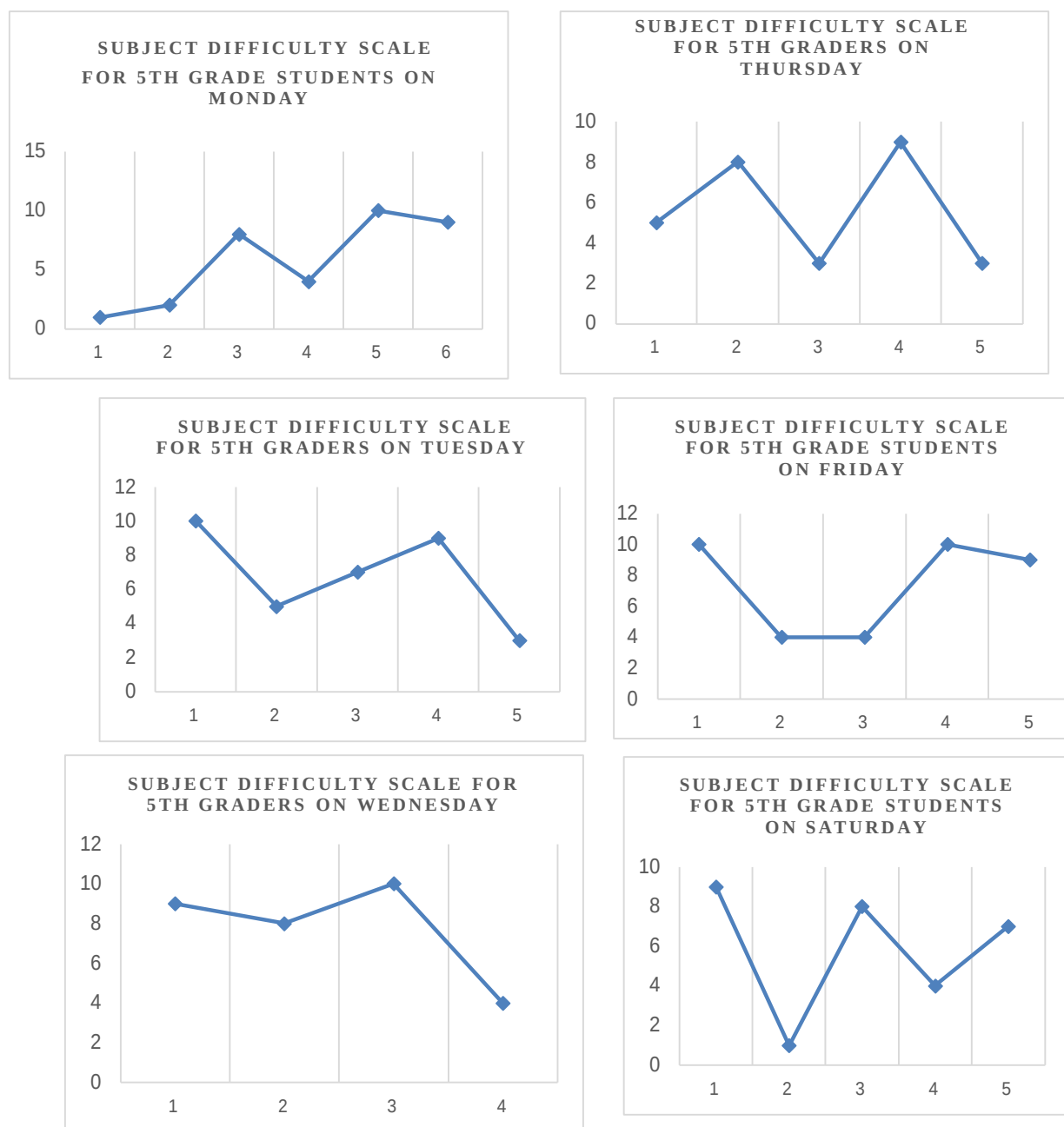
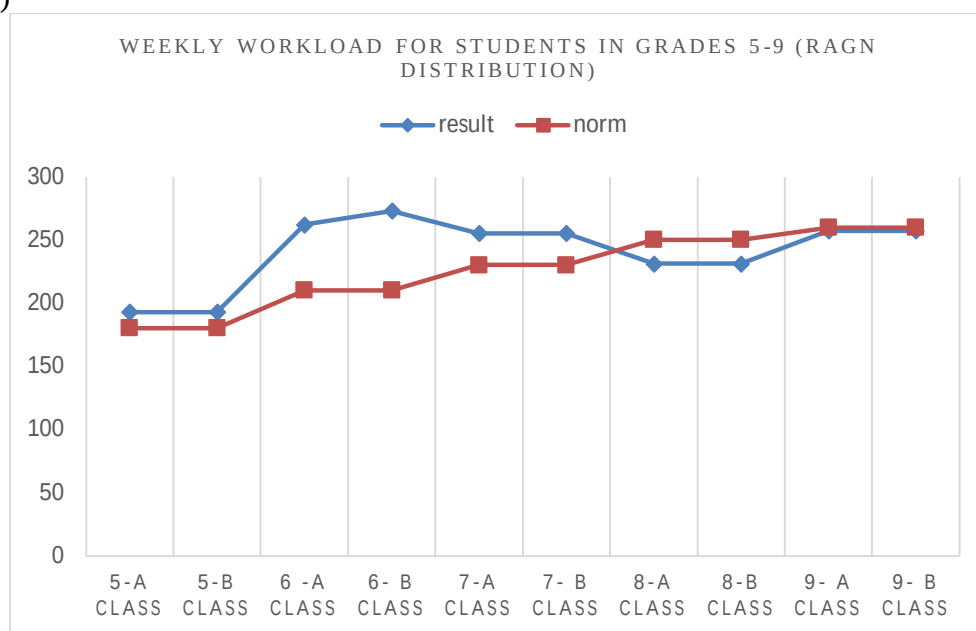


Figure 2. Dynamics of difficulty in weekly hygienic analysis of the lesson plan of 5th grade school students

Table 2. Weekly workload (grade distribution) for students in grades 5-9 (in points)

	5th grade	5th grade	6th grade	6th grade	7th grade	7th grade	8th grade	8th grade	9th grade	9th grade
result	193	193	262	273	255	255	231	231	257	257
standard	180	180	210	210	230	230	250	250	260	260

Analysis of the organized weekly lesson schedules shows that the high workload during the week, along with the reduction of students' ability to work on weekends, leads to a disruption of the daily routine, varying degrees of fatigue, and a number of functional changes in health [3.4.5.6] Table 2 (Figure 3)


3 - Fig . 5-9 class students weekly load (ragn distribution)

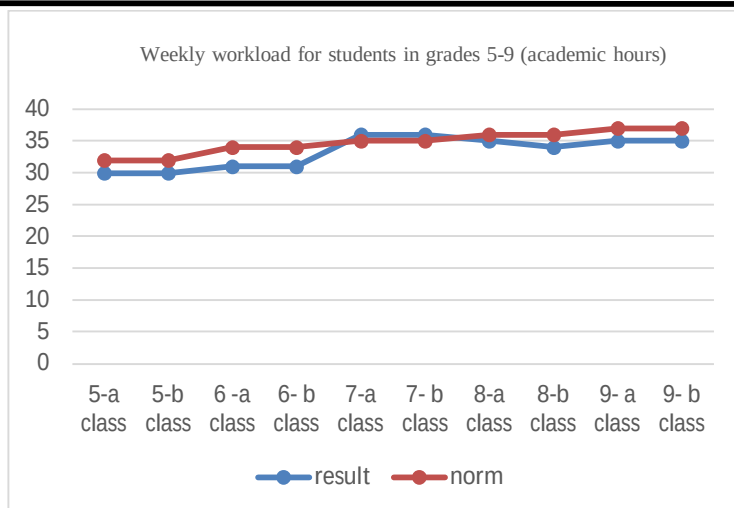
During the week and daily hours quantity permission mature from the borders not exceeded in case both , middle class students for from class outside homework load analysis that showed that many hours of lesson preparation to be, to analyze done to the information according to the lesson outside housework of the load high to be also affects children's health.

The lesson schedules for schoolchildren, the weekly lesson load for grades, and the hygienic standards meet the normative requirements for grades 5-6-8-9, while it was observed that this amount exceeded the 7th grade. Table 3. (Figure 4)

Table 3
Color distribution of study hours in grades 5-9 during weekdays depending on the level of severity (in points)

	5th grade	5th grade	6th grade	6th grade	7th grade	7th grade	8th grade	8th grade	9th grade	9th grade
result	30	30	31	31	36	36	35	34	35	35
standard	32	32	34	34	35	35	36	36	37	37

The analysis showed that while the number of hours for students in grades 5-6-8-9 meets hygienic requirements, an increase in the weekly workload was observed for grade 7, which led to a disruption of the children's daily routine and impaired functional status, as evidenced by scientific research.



4 - Fig . 5-9 class students weekly training load hour

In the private school, 6-day lesson schedules have been formed in the middle and upper grades. The composition of the lesson schedules of the classes in the private school and the distribution of the lessons by the level of complexity are presented in the following 4-tables .

of the 5th grade showed that on Mondays and Fridays, lessons with a high level of difficulty were placed in the general lesson schedules, that is, the daily total scores were 27 out of 51 points. As can be seen from the analysis of the weekly lesson schedule of the 5th grade students, despite the fact that the difficulty level of the subject is the beginning of the week, the level of difficulty and the workload increased on Monday, and the difficulty level of the lessons on Friday of the week was 44 points. Academic hours were 7 hours a day

Table 4

Color distribution of study hours in grades 5-9 of a private school during weekdays depending on the level of difficulty (in points)

day	No.	5th grade	6th grade	7th grade	8th grade	9th grade
Monday	1	10	13	10	8	9
	2	9	11	10	9	9
	3	9	11	10	8	9
	4	8	8	2	7	9
	5	5	12	7	8	9
	6	7	4	11	8	7
	7	3	8	6	7	7
		51	67	56	55	59
Tuesday	1	9	11	10	8	7
	2	4	11	10	8	7
	3	5	10	10	9	9
	4	4	1	1	2	6
	5	2	11	2	7	9
	6	11	3	11	10	4
	7	3	12	2	1	2
		38	59	46	45	44
Wednesday	1	3	11	10	9	7
	2	10	13	3	8	9
	3	9	4	10	7	7
	4	9	8	13	4	11
	5	5	4	4	10	4
	6	1	6	3	5	7

	7	4	11	5	2	7
		41	57	48	45	52
Thursday	1	10	13	10	7	9
	2	9	11	10	9	9
	3	9	4	10	8	7
	4	8	8	2	11	4
	5	7	2	2	5	4
	6	1	10	5	7	7
	7	2	9	7	3	11
		46	57	46	50	51
Friday	1	9	11	10	8	9
	2	3	11	10	8	9
	3	9	11	4	8	9
	4	11	3	6	9	8
	5	9	4	11	8	8
	6	2	8	4	1	9
	7	1	3	3	2	9
		44	51	48	44	61
Saturday	1	9	11	10	8	9
	2	9	11	10	8	9
	3	9	11	10	8	9
		27	33	30	24	27

Analysis of weekly lesson schedules, indicators of students' weekly workloads and the difficulty of subjects, shows that high weekly workloads, along with a decrease in students' ability to work on weekends, lead to disruption of the daily routine, varying degrees of fatigue, and a number of functional changes in health [5.6.7.8] Table 4.

The hygienic regulation of the educational process at school consists in organizing teaching and learning in accordance with the age-appropriate abilities of children, ensuring their labor productivity, ensuring their correct, harmonious and comprehensive development. The most effective solution to this problem can be achieved by correctly organizing the total number of daily and weekly lessons, regulating the duration of lessons and breaks, and rational planning of events during the school day and week.

CONCLUSION

The organization of lessons, the division of lessons into hours depending on the level of complexity on heavy and light days of the week, the lack of consideration of hygienic requirements in the formation of parts of lessons in subjects, leads to varying degrees of fatigue, exhaustion and a decrease in working capacity of students. The organization of the educational process in modern educational institutions, the increase in the duration of extracurricular activities in classes, the taking into account the health status of children and adolescents, the organization of the school educational process, the daily routine of students do not meet hygienic requirements.

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