

Analysis and Hygienic Assessment of the Educational Load of Secondary School Children in Tashkent

Niyazova O. A.

Tashkent Medical Academy

Abstract: Changes taking place in modern education, against the background of the deterioration of the state of health of students, make it necessary to analyze the educational schedule and assess its hygienic rationality. A significant number of disturbances in the analyzed schedules and study loads were identified, and the most typical mistakes in the structure of schedules were found.

Keywords: school schedule, hygiene assessment, school fatigue, general education school, prevention.

Formation of the schedule of academic activities is the one of the main and most complex tasks of automating the management of the educational process in a general education school. It is characterized by significant labor intensity, and its successful implementation is possible only if all departments of the educational institution are taken into account. The quality of the class schedule determines the effectiveness of the educational process [1, 2, 5].

A distinctive feature of modern school education is that its success is achieved by intensifying the mental activity of students in the conditions of lack of time by actively using electronic educational resources in the classroom [3, 4].

Changes that occur in modern education, along with changes in the structure of the lesson, are also expressed in the emergence of new academic disciplines and in changes in the content of school subjects, their difficulty, which determines the fatigue of classes for schoolchildren. Moreover, the widespread use of digital educational resources changes the usual nature of learning [2-4]. All this, in turn, affects the health status of students [6, 7].

The academic schedule plays an important role in organizing the educational process and protecting students' health [1, 7]. The class schedule influence on:

- maintaining high performance, or its decline;
- optimal functioning of the students' body;
- the presence or absence of excessive fatigue;
- harmonious development of schoolchildren.

The realities of modern school life are such that the construction of the educational schedule is influenced by many factors, including the capabilities and adequate attitude of teachers and school administration to this problem.

The purpose of the study: hygienic assessment of the educational load and school schedules of secondary schools in Tashkent.

Research methods. Hygienic assessment of school schedules and educational load in order to determine their compliance with sanitary and hygienic standards was based on the approach adopted in the hygiene of children and adolescents, based on identifying the correspondence of the dynamics of difficulty of educational subjects to the physiological "curve" of mental performance of schoolchildren. All indicators were evaluated and compared in accordance with SanRandN №0341-16 "Sanitary and epidemiological requirements for the conditions and organization of education in general education schools" of the Republic of Uzbekistan [5].

Research materials. The weekly and daily school schedules of more than 146 secondary classes of general education schools in Tashkent were analyzed and evaluated.

Research results. The number of hours allocated for students to master the curriculum of a general education school, which consists of a mandatory part and a part formed by participants in the educational process, should not in aggregate exceed the value of the weekly educational load.

The value of the weekly educational load (the number of study sessions), implemented through regular and extracurricular activities, is determined in accordance with table 1.

Table 1. Hygiene requirements for the maximum weekly educational load

Grades	Maximum-allowed weekly educational load, academic hour
	for a 6-day week of study, no more
5	32
6	34
7	35

The weekly load in the analyzed schedules of the 5th grades in 100% of cases was normal.

When studying the weekly load in the 6th grades - 99% was normal, only in 1% was found excess in the weekly load by 1-2 academic hours.

When studying the weekly load in the 7th grades - 98% was normal, only in 2% was found excess in the weekly load by 1-3 academic hours.

The weekly educational load should be evenly distributed throughout the school week, and the maximum allowable load during the day should be:

- for students in grades 5-6 - no more than 6 lessons.
- for students of the 7th grade - no more than 7 lessons.

When studying the daily load of the 5th grades, compliance with the norm was revealed in 100% of cases. The daily load in grades 6 and 7 was normal in 99% of the cases studied, only 1% of cases were detected with an increase in the daily load.

In the course of a hygienic assessment of the daily lesson schedule, taking into account the scale of difficulty of subjects and the peculiarities of the dynamics of mental performance, it was found that it was made irrationally in 39% of classes in general education schools (figure 1).

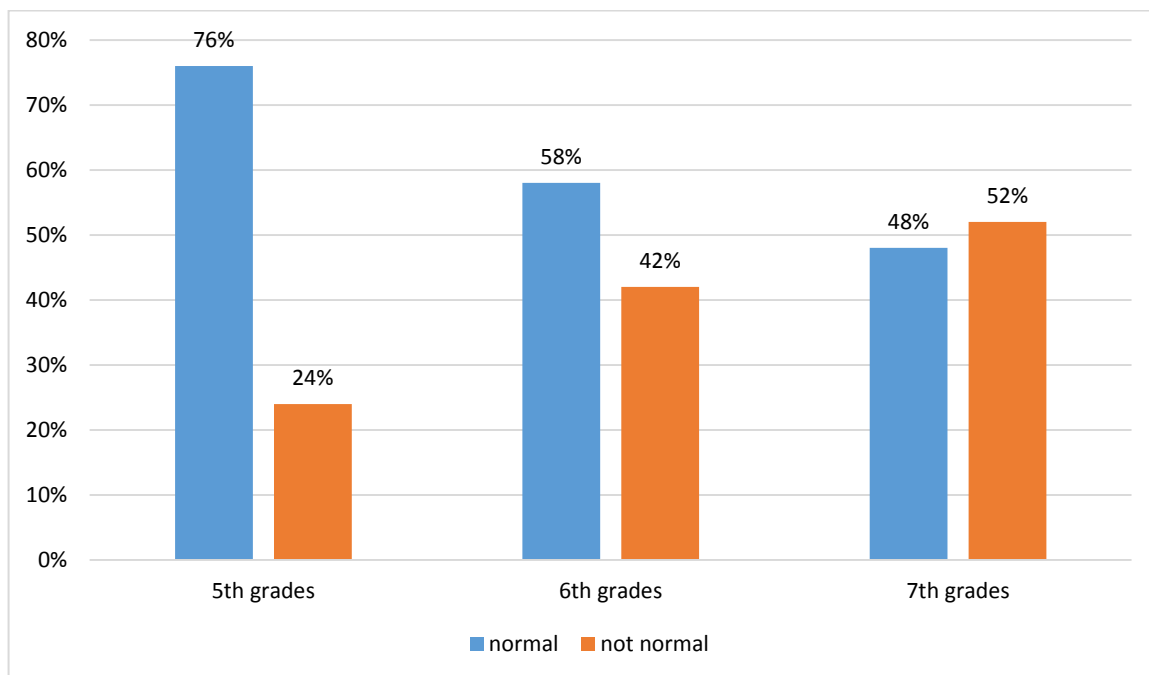


Figure 1. Hygienic assessment of the daily lesson schedule in secondary classes of general education schools

When studying the duration of lessons, which normally should not exceed 45 minutes in all classes, in 100% of cases it corresponded to the norm and amounted to 40-45 minutes.

The duration of breaks between lessons should be at least 10 minutes, and the duration of big break (after 2nd or 3rd lessons) should be 20-30 minutes [5]. Instead of one big break, it is allowed to set two breaks of 20 minutes each after the 2nd and 3rd lessons (Table 2).

Table 2. Norm for the duration of breaks between lessons in general education schools

Lesson number	Duration of breaks, minutes	Duration of breaks, minutes
1-2	10	10
2-3	20	10
3-4	20	30
4-5	10	10
5-6	10	10
6-7	10	10

In 98% of the general education schools studied, the duration of recess did not meet the standards, as there were break periods of 5 minutes.

In the classical view, Monday is a day of gradual development in educational activities, so the total difficulty score for the day should not be high; Tuesday and Wednesday should have the highest points on the difficulty scale; on Friday and Saturday, there should be a gradual decrease in the point load, since on these days the working capacity is reduced.

The most frequent mistakes identified in scheduling were as follows: the highest difficulty score occurred on the days with the lowest level of mental performance. For 7th graders, the highest difficulty score was found on Monday – in 25% of schedules, on Saturday - in 14.5% of schedules, and on Monday and Saturday - in 12.5% of schedules (Figure 2). In sixth grades, the highest difficulty score was on Monday - 17%, on Saturday - 14.6%, on the last days of the week-10.4%. In the fifth grades, the highest difficulty score was on Monday - 12%, on Saturday - 6%, on the last days of the week - 6%.

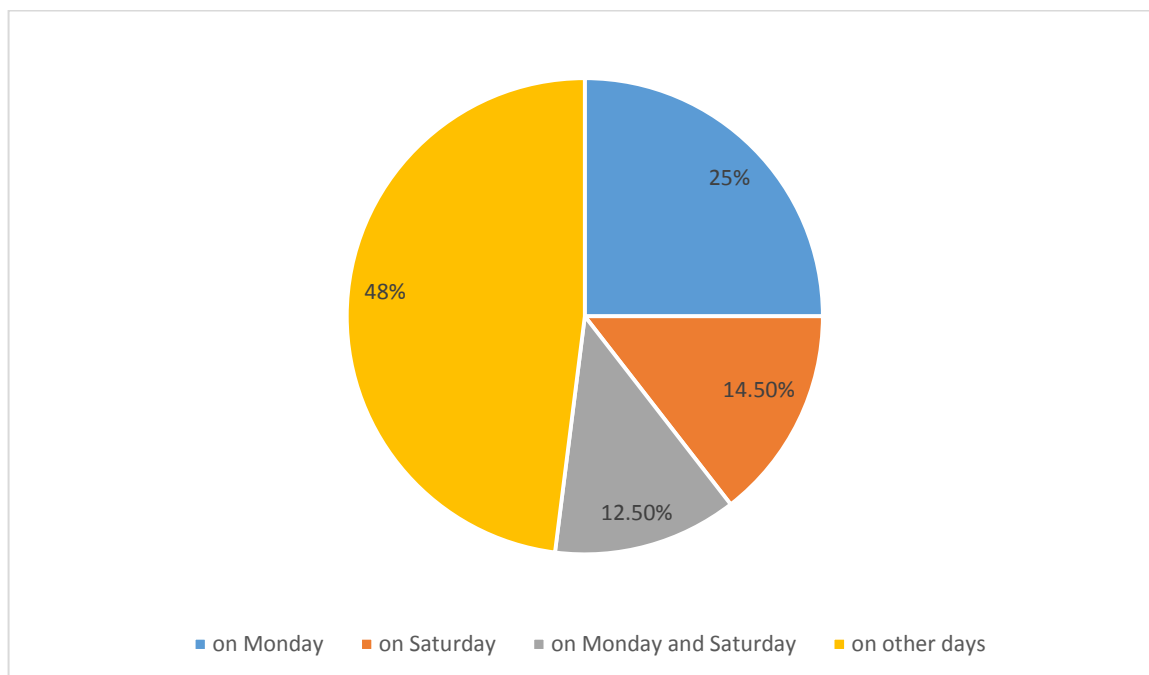


Figure 2. The highest total difficulty score of subjects by day of the week in school schedules for 7th graders of general education schools

When analyzing the daily dynamics of the point load of academic subjects and its correspondence to the physiological daily dynamics of students' performance, it was found that it was made irrationally in 53% of cases. At the same time, the following disturbances were found: the highest difficulty score falls on lessons when the level of mental performance is lowest: for the first lesson-28%; for the last lesson - 15 % of daily schedules; and for the first and last lesson - in 10% of schedules (Fig. 3).

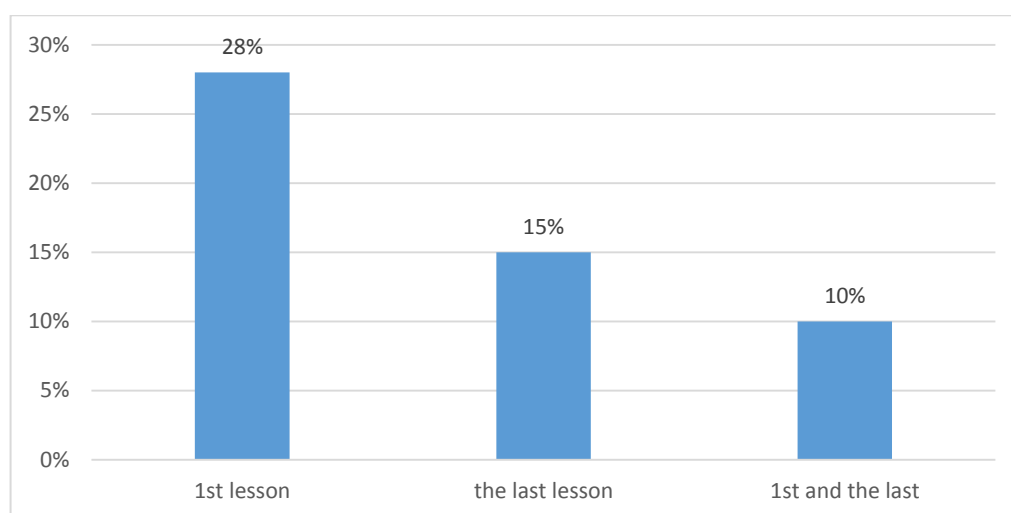


Figure 3. Daily dynamics of the point load of academic subjects for students in grades 5-7 of general education schools

Conclusion. A hygienic assessment of the lesson schedule in general education schools showed that insufficient attention is paid to these issues in the organization of the educational process. According to the estimated parameters, most of the weekly and daily class schedules, as well as the duration of breaks, do not meet hygiene standards.

Used literature.

1. Alexandrova I. E. Optimization of the hygienic assessment of the school schedule. Public health and habitat. 2015. No. 8. pp. 24-27.

2. Grebnyak N. P., Shchulro S. A. Integral assessment of the difficulty of educational subjects. *Hygiene and sanitation*. 2010. No. 1, pp. 12-15.
3. Klevansky N. N. Basic concepts for implementing tasks of schedule formation. *Educational resources and technologies*. 2014. No. 2 (5). pp. 9-21.
4. Klevanskii N. N., Puzanov A. A., Kostin S. A. Analysis of requirements and restrictions in the task of scheduling. *Educational technologies: mezhvuz. sb. nauchn. tr. Voronezh: VSPU*, 2004, pp. 164-168.
5. Sanitary and epidemiological requirements for the conditions and organization of training in general education schools: *SanRandN No. 0341-16. T.*, 2018. pp. 37-38.
6. Sukhareva L. M., Parakhport I. K., Polenova Jr. Morbidity and mental performance of Moscow schoolchildren // *Hygiene and Sanitation*. 2014. No. 3. pp. 64-67.
7. Suvorova L. V., Yakubova I. Sh., Maslennikova M. M. School students' health riskin connection with non-rational organization of the educational process and daily routine // *Russian hygiene-developing traditions, setting goals for the future. Materials of the XII All-Russian Congress of Hygienists and Sanitary Doctors Moscow, 2017, vol. 1*, pp. 626-629.