

HYGIENIC ASSESSMENT OF SCHOOL FURNITURE IN PRIMARY CLASSROOMS

Niyazova Olga Andreevna
Tashkent Medical Academy

Abstract: This study examined the provision of primary classrooms of schools with basic schoolchildren's furniture, such as desks, chairs and blackboards, and also gave a hygienic assessment of the organization of schoolchildren's workplaces. As a result of the study, the main shortcomings of school furniture and various parameters in organizing workplaces for primary schoolchildren were identified.

Key words: comprehensive school, classrooms, primary classes, school desks, school chairs, blackboards.

Relevance. Negative trends in the state of health of schoolchildren in comprehensive schools, as well as in connection with the changes that have occurred in school education in recent years, have raised the problem of creating optimal hygienic conditions for learning and organizing schoolchildren's jobs [5, 8-10].

The use of school furniture that meets sanitary and hygienic requirements is of great importance for ensuring long-term performance, proper physical development, and prevention of postural and vision disorders in schoolchildren. Ergonomic parameters of the workplace, namely furniture, affect the physiological, psychological and behavioral levels of the functional state in schoolchildren, the state of the musculoskeletal system, as well as the fatigue and academic performance of students [1, 2, 5].

In the system of school health saving, an important place belongs to the problem of equipping classrooms with school furniture, which should correspond to the anatomical and physiological characteristics of children and adolescents, ensure a comfortable, correct posture of the child during classes and prevent the development of school forms of pathology [2-6].

The proper arrangement of a desk, table or chair and the correspondence of their elements to body proportions and height determine the correct seating of children, and, accordingly, the prevention of early fatigue, posture disorders, curvature of the spine and prevention of visual impairment [3-6]. The goal is to relieve tension. This is achieved by distributing the load on as many muscle groups as possible. In the Republic of Uzbekistan, the rational organization of the educational process is regulated by SanNandR 0341-16 «Sanitary and epidemiological requirements for the conditions and organization of education in comprehensive schools». This document outlines the requirements, including those for school furniture [7].

Purpose of the study is to investigate and evaluate the organization of workplaces for primary school students in general education schools.

Research objects: as objects of study were taken general education schools in Tashkent: general education school № 44 in the Chilanzar district, general education school № 89 in the Yakkasaray district.

Materials and methods of research: the main furniture (desks, chairs, blackboards, televisions)

of the primary classes of comprehensive schools was taken as the research materials. During the study, instrumental and computational research methods were applied.

Research results: In comprehensive school № 44, classrooms for primary grades are located on the 2-nd floor, in comprehensive school № 89, classrooms for primary grades are located on the 1-2 floors of the separated part of building.

Educational premises for primary classes in both schools have sufficient square footage. Natural lighting in all classrooms for primary classes of secondary schools is left-handed.

Pupils of elementary grades of general education schools study in the classrooms assigned to each class. Since education in schools is two-shift, different classes can take turns studying in the same classroom (for example, grade 2 in the first shift, and grade 3 in the second shift).

In 100% of the studied classrooms of secondary schools № 44 and 89, the arrangement of desks was in three rows, 6-7 desks in each row. The desks are placed in the classrooms by numbers: the smaller ones are closer to the blackboard, the larger ones are farther away.

The main type of school furniture for students of primary general education is a school desk. In the studied general education schools, all desks have a classic version, they are double, without providing a work plane surface inclination regulator. Some desks have hooks on the side for hanging satchels or briefcases - 10%. Also, most desks have an additional shelf under the desk top for storing books or other school supplies.

In SanNandR 0341-16, as well as in the general technical regulation "On the safety of furniture products" of the Republic of Uzbekistan, there are requirements for marking school furniture. The marking of school chairs, tables, desks should indicate: in the numerator - their height number, in the denominator - the average height of children. On the visible outer surfaces of tables, desks and chairs for schools and educational institutions should be color-coded in the form of a circle with a diameter of at least 10 mm. or a horizontal strip with a size of at least 10x15 mm, in the following colors, depending on the height numbers of the furniture item: 1 - orange, 2 - purple, 3 - yellow, 4 - red, 5 - green, 6 - blue. In the studied schools, the above markings are not on the educational furniture.

When studying the equipment of classrooms for primary classes of comprehensive school № 89, the following dimensions of passages and distances were identified, in cm:

- between the rows of double tables - in 100% of the classes it corresponded to the norm of at least 60, that is, it varied within 64-84 cm;
- between a row of tables and an outer longitudinal wall - in 90% of the classes it was within 62-68 cm, which corresponds to the norm of at least 50-70 cm. In 10% of the classes, this distance corresponded to 26-45 cm.
- between a row of tables and an internal longitudinal wall (partition) or closets along this wall - in 90% of the classes it was more than 50, which corresponds to the norm, and in 10% of classrooms for primary classes this distance was 32-40;
- from the last tables to the wall (partition) opposite the blackboard - in 100% of the classes it was more than 70 cm, which corresponds to the norm;
- from the first desk to the blackboard - in 40% of primary school classrooms it was from 157 to 238, which does not correspond to the norm (norm: at least 240 cm), compliance with this distance was observed in 60% of classes and amounted to 242-260;
- the greatest distance of the last place, the student from the educational board - in 100% of the classrooms for primary grades was up to 860, which complies with the standards;
- the height of the lower edge of the blackboard above the floor - in 80% of the primary school classrooms was 83-90, which is within the normal range, and in 20% of the classrooms 98-103, which does not correspond to the norm.

The same studied parameters in secondary school № 44 were:

- between the rows of double tables - in 100% of the classes varied within 54-70 cm;
- between a row of tables and an outer longitudinal wall - in 50% of the classes it was within 57-62-68 cm, which corresponds to the norm. In other classes, this distance did not meet the standards and amounted to 30-47 cm.
- between a row of tables and the inner longitudinal wall - in 80% of the classes it was 56-66, which corresponds to the norm, and in 20% of classrooms for primary classes this distance was 23,5-43;
- from the last tables to the wall (partition) opposite the blackboard - in 18% of the classes did not meet the norm;
- from the first desk to the blackboard - in 50% of primary school classrooms it was from 200 to 238, in other classrooms - 245-326, which corresponded to the norms;
- the greatest remoteness of the last place, the student from the educational board - in 100% of the classrooms for primary classes met the standards;
- the height of the lower edge of the training board above the floor - in 50% of the classrooms it was 80-85, and in the rest 92-94, which does not correspond to the norm.

The dimensions of student furniture according to SanNandR 0341-16 “Sanitary and epidemiological requirements for the conditions and organization of education in secondary schools”, depending on the height of the students, must correspond to certain values. There are 6 groups of furniture depending on the height of the students. A combined use of different types of student furniture is allowed. The angle of inclination of the tabletop should be 15-17°.

Desks in both secondary schools are placed in classrooms: smaller ones are closer to the blackboard, larger ones are farther away, which is the correct arrangement.

In comprehensive school № 44, the height of the desks in the primary grades was 58-64-65-70 cm, the height of the chairs was 33,5-37-38-41 cm, while in 10% the height of the chairs did not correspond to the height of the desks. In comprehensive school № 89, the height of the desks in the primary grades was 58-64-65-68-70 cm, the height of the chairs was 34-37-37,5-38 cm, while in 8% of the studied furniture under the legs of the desks there were wooden bars with a height of 3,5-7 cm in order to bring the height of the desks to the height of the students.

100% of the study desks were 120 cm long and 50 cm wide. At the same time, 10% of teachers noted inconvenience for students: some new textbooks are longer and, as a result, it is impossible to put the textbook over the notebook directly in front of you so that you can rewrite something from the textbook. Because of the above stated, students are forced to put the textbook on the left side obliquely, which requires turning the body and the result of which is the wrong seating of students, also in this position, schoolchildren sitting at the same desk interfere with each other.

For the rational selection of furniture, in order to prevent disorders of the musculoskeletal system, it is recommended to equip all classrooms and classrooms with height rulers. There were no height rulers in the study classes.

According to SanNandR 0341-16, blackboards (using chalk) must meet the following requirements:

- blackboards should be made of materials that have high adhesion with the materials used for writing,
- easy to clean with a damp sponge
- be durable
- have a dark green or dark brown color and an anti-reflective coating.

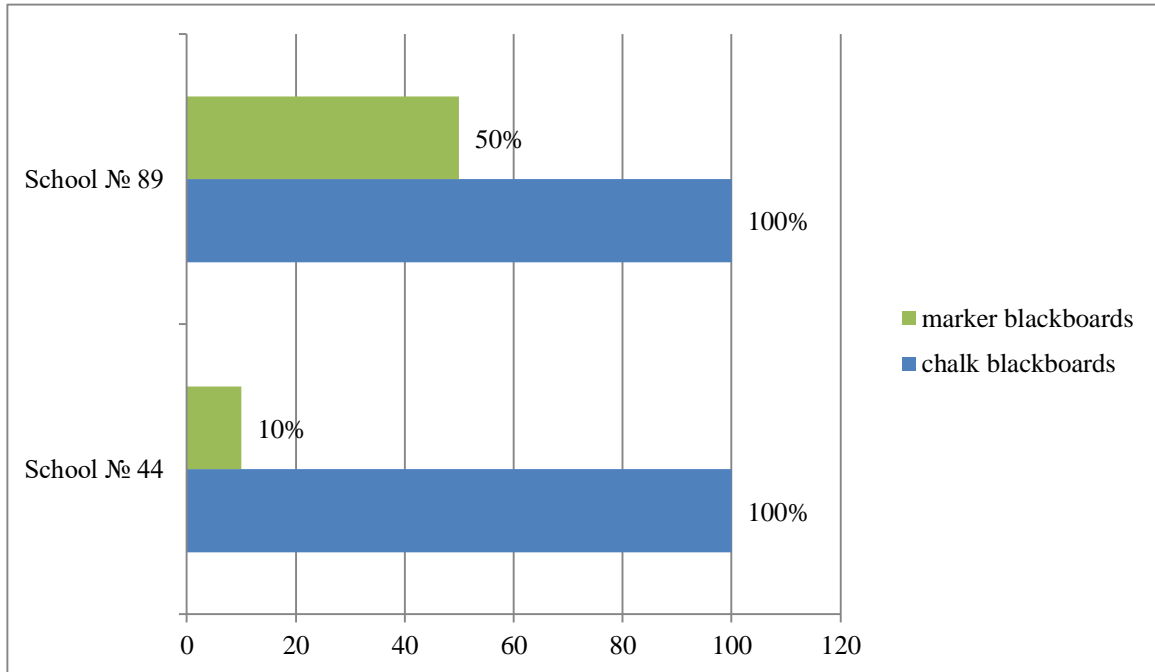
Blackboards should also have trays for holding chalk dust, storing chalk, rags.

In 100% of the studied primary school classrooms there are blackboards with chalk. Blackboards in classrooms for elementary grades of comprehensive schools № 44 and 89 meet sanitary and

hygienic requirements. In addition to all the above parameters, 80% of the studied blackboards also have linear and / or cell coloring for easier writing.

In general education school № 44, 10% of primary school classrooms have additional marker boards, and in school № 89, 50% (Fig. 1). Marker boards were of 2 types: free-standing (on legs with wheels for easy movement) and attached to the walls.

Figure 1.



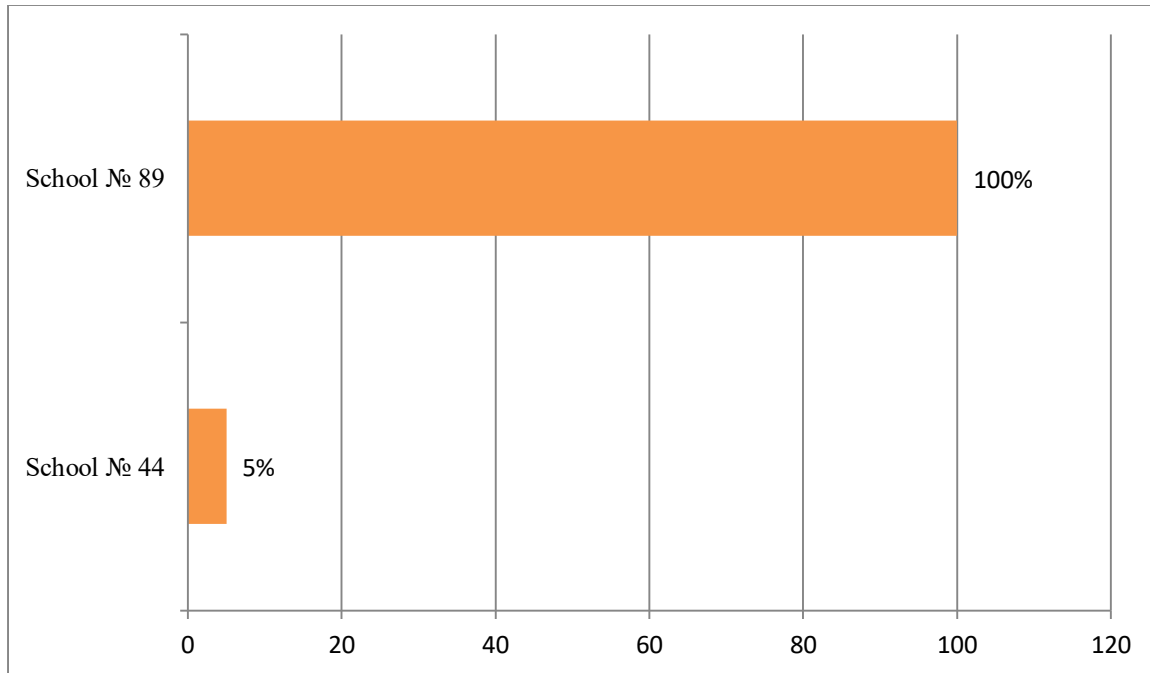
Provision of primary school classrooms of comprehensive schools with chalk and marker blackboards.

When using a marker board, the color of the markers was contrasting (black, red, brown, dark tones of blue or green).

TVs were additionally installed in each classroom of the elementary grades of school № 89, and in school № 44 only one studied class had a TV (Fig. 2). Each TV was hung on the wall, to the right of the blackboard or above it. When viewing educational material on TV, the placement of spectator seats ensured a distance of at least 2 m from the screen to the eyes of the students.

Figure 2.

Provision of primary school classrooms comprehensive schools with TVs.



Conclusion. The provision of basic school furniture (desks, chairs, blackboards) in secondary schools № 44 and № 89 is satisfactory. The study revealed a lack of markings on school furniture. The provision of marker boards and televisions at secondary school № 89 is better than at secondary school № 44. There are shortcomings in the arrangement of furniture and maintaining the distance between rows that can be corrected. In school № 89, in 8% of cases, the seating of schoolchildren did not meet hygienic requirements; in school № 44 the same figure was 16%.

References:

1. Akhmadaliyeva, N. O., Imamova, A. O., Niyazova, O. A., Muratbayeva, A. P., & Umarov, B. A. (2023). HYGIENIC CHARACTERISTICS OF HARMFUL FACTORS OF WORKING CONDITIONS OF INFECTIOUS DISEASES DOCTORS.
2. Axmadaliyeva, N., Imamova, A., Nigmatullayeva, D., Jalolov, N., & Niyazova, O. (2022). Maktabgacha yoshdagi bolalarda sog 'lom turmush tarzini shakllantirishning dasturiy platformasi.
3. Dolich V. N. The role of ergonomic factors in the development of disorders of the musculoskeletal system in students / V. N. Dolich, N. E. Komleva, V. A. Medentsov, T. A. Novikova // Fundamental and applied aspects analysis of risk to public health: mater. Vseros. scientific and practical. Internet conference of young scientists and specialists of Rospotrebnadzor from the international. participation. - Perm: Perm National Research Polytechnic University, 2020. - P. 344-348.
4. HER. Efremenko, E.V. Kovalevskaya, T.N. Rymin // Health. Medical ecology. The science. - 2010. No. 1-2 (41-42). -WITH. 99-100.
5. Khramtsov P.I. Hygienic problems of using student furniture in elementary school / P.I. Khramtsov, V.V. Moldovanov // ZNiSO. - 2008. - No. 1. - S. 33-35.
6. Kozhevnikova O.A. School furniture of the classroom of an educational institution / O.A. Kozhevnikova, A.S. Novikova // Eurasian Scientific Association. - 2019. - No. 2-2 (48). - S. 104-106.

7. Latyshevskaya N. I. Hygienic assessment of school furniture in educational institutions of the city of Volgograd (experimental study) / N. I. Latyshevskaya, N. V. Krylova, L. A. Davydenko, L. P. Slivina // Preventive and Clinical Medicine . - 2014. - No. 1 (50). - S. 36-39.
8. Niyazova, O. A. (2018). STUDY OF THE INFLUENCE OF PHYSICAL EDUCATION ON THE FUNCTIONAL STATE OF THE ORGANISM OF PUPILS OF COMPREHENSIVE SCHOOLS. *Medical Scientific Bulletin of Central Chernozemye (Naučno-medicinskij vestnik Central'nogo Černozem'â)*, (73), 54-58.
9. Pyatyrova E.V. School furniture and its impact on children's health / E.V. Pyatyrov,
10. Romanovskaya E. E. Assessment of the compliance of school furniture with sanitary and hygienic requirements / E. E. Romanovskaya // Youth of the XXI century: education, science, innovations: Mater. VIII All-Russian. scientific and practical conf. with international participation. In 2 parts, / Ed. A.S. Khomchenko. - Novosibirsk: Novosibirsk State Pedagogical University, 2019. - P. 153-155.
11. Sanitary and epidemiological requirements for the conditions and organization of education in secondary schools: SanPiN 0341-16. Т., 2016. S. 13-15, 34
12. Sargosh O.D. Hygienic regulation of school furniture as a component of the paradigm for the prevention of violations of the child's posture / O.D. Sargosh, O.P. Chetverikova, A.V. Katrushov // Human health, theory and methodology of physical culture and sports. - 2019. - No. 2 (13). - S. 91-96.
13. Sukhov V. A., Vishnyakova M. V., Novikova T. R. Economic and hygienic assessment of the influence of school furniture on the dynamics of morbidity of the musculoskeletal system in children. scientific works VI All-Russian. scientific and practical. Conf. with intl. participation - St. Petersburg: North-Western State Medical University. I.I. Mechnikova, 2021. - S. 373-378.
14. Zulkarnaeva A. T. Influence of individual factors on the health of schoolchildren / A. T. Zulkarnaeva, E. A. Povargo, T. R. Zulkarnaev [et al.] // Population health and habitat - ZNiSO. - 2012. - No. 8 (233). - S. 29-31.
15. Ниязова, О. А., & Ахмадалиева, Н. О. (2023). ФОРМАЛЬДЕГИД В ВОЗДУХЕ ОБРАЗОВАТЕЛЬНЫХ УЧРЕЖДЕНИЙ И ЕГО ВЛИЯНИЕ НА СОСТОЯНИЕ ЗДОРОВЬЯ. *Научный Фокус*, 1(5), 442-453.
16. Ниязова, О. А., Ахмадалиева, Н. О., Валиулин, Р. И., & Болтаев, М. М. (2022). *Comperative assessment of nutrition of university students of medical and non-medical profile* (Doctoral dissertation, European multidisciplinary journal of modern science).
17. Ниязова, О. А., Саломова, Ф. И., & Ахмадалиева, Н. О. (2022). ИЗМЕНЕНИЯ СОСТОЯНИЯ ЗДОРОВЬЯ ШКОЛЬНИКОВ, ВОЗНИКАЮЩИЕ ПРИ НЕПРАВИЛЬНОЙ ПОСАДКЕ. *ЎЗБЕКИСТОН РЕСПУБЛИКАСИ СОҒЛИҚНИ САҚЛАШ ВАЗИРЛИГИ ТОШКЕНТ ТИББИЁТ АКАДЕМИЯСИ*, 196.
18. Ниязова, О. А., Саломова, Ф. И., & Ахмадалиева, Н. О. (2022). Изучение изменений состояния здоровья школьников возникающих при неправильной посадке.
19. Ниязова, О., & Саломова, Ф. (2022). Studying changes in the health state of school children arising from incorrect fitting.
20. Ниязова, О., & Саломова, Ф. (2022). Studying changes in the health state of school children arising from incorrect fitting.
21. Саломова, Ф. И., Ахмадалиева, Н. О., Имамова, А. О., & Ниязова, О. А. (2022). *Формирование принципов здорового образа жизни у дошкольников* (Doctoral dissertation, O 'zbekiston Respublikasi Sog 'liqni Saqlash vazirligi, Toshkent tibbiyot akademiyasi, Koryo universiteti "Atrof muhit muhofazasining dolzarb muammolari va inson

salomatligi” xalqaro ishtirok bilan Respublika 9-ilmiy-amaliy anjumani materiallari to ‘plami 153 bet).

22. Саломова, Ф. И., Ахмадалиева, Н. О., Ниязова, О. А., & Хайруллаева, Л. Г. (2022). Изучение и гигиеническая оценка питания студентов Высших учебных заведений (узбекистан, германия).
23. Саломова, Ф. И., Ниязова, О. А., & Мирсагатова, М. Р. (2022). Гигиеническая оценка расписания средних классов Общеобразовательных школ наманганской области.