

Organizational Problems of Nutrition in the Context of Modernization of Education

Raisa I. Platonova^a, Uljana M. Lebedeva^a, Anna G. Cherkashina^b,
Liliya I. Ammosova^a and Alyona V. Dokhunaeva^a

^aNorth-Eastern Federal University, Yakutsk, RUSSIA; Agricultural Academy of f Yakutia, RUSSIA

ABSTRACT

The realization of the project of regional educational systems' modernization was started in 2011. The main goal of the project is to achieve systemic positive changes in the school education, improving of learning conditions, increasing of openness, availability, efficiency of General education, introduction of modern educational technologies. In this regard, the study of organizational problems of school nutrition as an important condition to improve the quality of educational services in the schools is particularly important. The purpose of the study: the study and analysis of scientific and theoretical literature on the problem of the quality of school meals' organization in the system of General education. Methods of the study: analysis and interpretation of scientists' studies - researchers in different fields of science on the basis of theoretical methods. The study results: the social importance of school meals in the modern system of General education is revealed, the basic problems of organization of school nutrition and the conditions that influence the improvement of its quality, availability and security are defined. Practical significance: the results of the study will be useful for specialists interested in the issues of modernization of General education in Russia, organization of school meals, leaders of educational organizations.

KEYWORDS

School nutrition, quality of education, healthy food, the efficiency of the educational activities, the formation of food culture

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Introduction

At the present stage of market transformations in Russia the great attention of customers in the education is focuses on the characteristics, the most important of which is the quality of education, socially-pedagogical conditions of schools, material and technical base, under which the process of

CORRESPONDENCE Raisa I. Platonova ✉ platonova_raisa@mail.ru

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training and education is conducted. The new requirements, needs and expectations of parents, children and the public define the strategy of development of Russian schools in a situation of increasing competition, permanent state and public control. One of the important conditions for effective organization of educational activities, ensuring of educational success, intellectual, emotional, and physical development of children is a school feeding. "Taking a fresh look at school meals is required and by Federal state educational standards where the requirements for the results of education are inseparable from the requirements to ensure their conditions" (Shamaeva, 2010).

According to many researchers the nutrition, food culture, dietary habits affect the academic performance of students, quality of school education (Tapeshkina & Klishina, 2013; Sharipov, 2010; Kargina, 2009; Solovyova, Kuznetsov, 2008; Platonova et al., 2016). School period of the child is the most important in its personal, social, physical, intellectual and emotional development and in formation of a healthy lifestyle. "The most important condition for the normal functioning of the human body is a complete, balanced diet, particularly during growth and development. The period from 7 to 18 years of age, when the child most of the time spends in school is connected with most intense somatic growth of the organism, accompanied by increased mental and physical exertions" (Dolmatova, Zaitseva & Ryabova, 2015).

School meal is regulated by the sanitary rules, requirements and standards, and therefore largely consistent with the main principles of rational nutrition. However, there are problems in the organization of school meals for children in educational organizations: an unsystematic approach, lack of personnel, "low professional level of workers of canteens because the issue of training and qualification of personnel working in school nutrition is not resolved" (Zakirova & Baryshnikova, 2014), the lack of monitoring by class teachers, social pedagogues, psychologists, the passivity of parents, public organizations in the extracurricular environment of the places of proper nutrition, lack of systematic information education of children about food culture, nutrition, undue management attention to correct school meals as an important factor of academic achievement of students (Sharipov, 2010). "Unfortunately, in many schools, regions and the country as a whole, for many years there was no clear systematic approach to the organization of school feeding: although there were in different years developed criteria of efficiency of functioning of system as a whole and its individual units, however, the criteria for various reasons were not developed in full, which gave rise to massive violations in the organization of nutrition" (Kadnevsky & Dolgusheva, 2012).

In order to effectively improve the system of nutrition in educational organizations it is necessary to break the negative public stereotypes and eating habits of students and their families, to organize large-scale activities on development of skills of rational nutrition and healthy lifestyle. The current situation requires analysis and identification of the main problems of school nutrition, the introduction of alternative systems of its organization.

The purpose of the study

The purpose of this paper is to examine and analyze the scientific and theoretical literature on the research problem; identifying the key issues and conditions influencing the quality of school nutrition.



Methodological Framework

The theoretical part of the study was conducted through the application of theoretical methods (analysis, synthesis, comparison, generalization), which allowed to identify the condition of organization of school nutrition in educational institutions, to clarify the factors influencing the organization of school nutrition, to systematize the approaches of researchers from different fields of science to the question considered and justify the social importance of the quality of organization of school nutrition.

Results

The problem of nutrition's organization of schoolchildren is currently one of the most important tasks of modernization of Russian system of General education, aimed at formation of a healthy young generation. As a result of innovations in the educational syllabus of the schools the approaches has been changed to the solution of major problems and tasks of training and education. One of the important conditions of improvement of academic achievement of pupils, quality of organization of educational process and achievement of high indicators in assessing the effectiveness of the educational activities of schools is the organization of nutrition. Despite the ongoing transformations in the system of General education in Russia some children are still not getting the necessary balanced diet, taking into account age, health state, mental and physical stress, change of educational process, mode of operation of educational organizations, territorial and climatic features of the region. Many researchers take into consideration the problem of school nutrition only in the field of medical science. In our view, the problem of organization of school nutrition requires a comprehensive approach taking into account managerial, pedagogical, technical, economic and social fronts (sides).

Numerous studies have shown that human mental abilities are determined not only by hereditary factors and conditions of training and education, but a way of life, including nutrition.

Conditions of educational activity of pupils in modern conditions are characterized by active introduction of computer technology, a large amount of dynamically changing educational information from various sources, using constantly of updated pedagogical technologies aimed at intensification of training activities; what causes hypokinetic changes, disturbances in the nutrition mode, deterioration in their health (Artemyeva & Lavrichenko, 2014).

The modern student get knowledge the scope and level of which is constantly increasing, the conditions of the school environment do not change, and in some cases in connection with the transition to the senior class conditions deteriorate. The curriculum of subjects is constructed so that each year the workload is increased due to the number of classes, their duration, knowledge, tasks, complexity of the studied topics and subjects. In this regard, the introduction of new educational technologies in the educational process requires expert assessment on conformity of the program for it use in the educational process of schools and the conditions of its implementation (Nagaeva, 2014; Degtjeva & Zubova, 2003).

In recent years, with the introduction of various pilot training curricula, the Single State Exam, Basic State Exam, the quality of education has changed significantly, a continuous increase in the volume and complexity of the educational material is noted. The increase in teaching load, time of application of computer educational technologies, the emergence of new subjects, the performance of complex tasks cause emotional, intellectual and physical overload, stress, additional high energy consumption, reducing efficiency, focus, pace and efficiency of educational activity of student. High energy consumption causes tension of functional systems of the human body, which affects his physical health (Magomedov, Zatsepilina & Lygin, 2014). The transition of the modern school to new Federal state educational standards, including inclusive education of children with disabilities, requires the provision of quality accessible education taking into account the individual characteristics and needs of each student. In this direction the school nutrition takes on even greater urgency as children with disabilities, depending on violations in health status require special approaches to the organization of nutrition.

Search for new methods of organizing of health promoting environment in the school where nutrition is one of the important places ensuring the preservation and strengthening of health of schoolchildren, in recent years is reflected in **psycho – pedagogical studies**. Issues related to child health during the period of schooling have been the subject of scientific studies since the 19th century. In 1870 the concept of "school diseases" was introduced in scientific works of the German scientist R. Verkhov. To eliminate the common school diseases such classes were offered: outdoor games, dances, gymnastics, and all kinds of art. Experts believed that it is necessary to move from "passive-receptive" education to the "school of action". In Russia in 1904 at the medical Congress, where scientific debate was focused on the influence of training loads on the health state and physical development of children the bases of the concept of health preservation were adopted. Despite numerous attempts to modernize the school at different stages of the history of the state, the basis of this conception was not changed.

In the history of domestic pedagogy Pavlyshskaya secondary school under the guidance of A.V. Sukhomlinsky is one of the first schools with the curriculum for protecting the health of student community. Until the 1980s years, the curriculum on health protection in schools was based on "three-component" model, consisting of the following provisions:

- 1) the content of subjects was focused on the principles of health, a healthy lifestyle and change of bad habits, the formation of correct behavior with a focus on health;
- 2) before the child entered school medical service performed early preventive diagnosis and in the process of study at school eliminated problems that occurred in children's health;
- 3) an important condition of academic achievement of children was considered a healthy environment that were associated with observance of requirements of hygiene and creating a positive psychological atmosphere, safe nutrition of children (Krutova, Markovskaya & Nekroenko, 2016).

In studies of modern pedagogical science one can meet the scientific works on the problems of formation of culture of school nutrition, nutrition culture in the aspect of teaching children the skills of healthy lifestyle, development of



traditional nutrition culture of the peoples as part of ethno pedagogics (Muskhanova, 2011; Petrova & Kuznetsova, 2014). There are educational books, training curricula, scenario and conspectus of lessons on healthy nutrition.

In the psychological Sciences researches are conducted related to issues about the formation of a human nutrition behavior at an early age (Ladodo et al., 2009), based on taste preferences from external factors (Mennella & Bobowski, 2015), deliberate control and regulation of one's nutrition behavior (Badertdinov, 2014).

In the organization of school nutrition the issue of ensuring of a **balanced diet** that takes into account the physiological need for energy value, useful nutrients based on age, health state, physical activity, educational activity of the child, the environment and climate is of great importance. Researchers conducted a comparative analysis of nutrition of children in the Soviet period and at the present stage, which is given in Table 1 (Zhidkov, Chimonina & Katunina, 2016).

Table 1. A comparative analysis of school nutrition in the USSR and modern Russia

Key indicators	Rational nutrition of schoolchildren in the USSR	Rational nutrition of schoolchildren in contemporary Russia
Subordination	Dining room belonged to the school. It was completely controlled by and dependent on the school administration.	School canteens are private enterprises
The cost	Each student was allocated 2-3 rubles, in Russia, today it is 30 rubles	One hot lunch cost 40 rubles
The quality of food products for nutrition	Agricultural enterprises provided food products which were natural, without preservatives.	Products are manufactured with the addition of food additives, preservatives. When transporting are perishable

As it is shown in Table 1, great changes from cost to quality of products in the organization of school nutrition occurred. Lately, experts continue to look for new and better ways to provide quality organization of school nutrition.

One of the main obstacles in the organization of school nutrition is the weak **legal framework for management and control**. Despite the fact that the regional education authorities of constituent entities of the Russian Federation were not enshrined by law on the duty of management and control over the organization of catering of pupils in educational institutions, their functions in this field are determined by the Law "On education". Because the specifics of implementation of these functions in this regulatory framework are not reflected, so depending on the form and extent of the involvement of local authorities in matters of school nutrition in different entities has an entirely different depth and focus mechanisms of the influence, from the development of curricula and proposals in the sphere of school nutrition to food supply, placing of orders for catering of students or the creation of a municipal (regional) companies of school nutrition. Currently, the legislation of the Russian Federation not fully provides rules for the delimitation of powers of state authorities in the sphere of catering of students in educational institutions, in

addition, none of the levels of government possesses structure (division), endowed with the fullness of the responsibility for this activity.

The lack of clarity in division of powers and a system approach in addressing issues of nutrition in educational institutions leads to a sufficiently large number of **economic problems** related to the lack of guarantees both safety and quality of food services, the consequence of which is the risk of deterioration of health of the younger generation and inefficient use of resources involved, as personal parenting resources, so budget allocations (Dolgopolova, 2015; Rozhdestvenskaya, 2013).

When conducting surveys regarding the quality of food provided in educational institutions, we often have to deal with varying degrees of consumer dissatisfaction, which is formed by the gap between the expected and real situation (Khrebtova, Goreva & Petrenko, 2015; Ahmadullina, Akhmadullin & Zulkarnaeva 2014).

In this situation, the basic contradiction that exists at the moment in the system of school nutrition is that there are serious disagreements about the evaluation of this quality on the part of children, parents, administration and representatives of education, health and regulatory authorities (Rospotrebnadzor). The contradiction lies in the fact that the emphasis on the physiological basis of the set of products and diets is meaningful only in the case of guaranteed consumption by the eaters. "If the cooked food is left intact, the amount of protein, fat and carbohydrates in it, not to mention components of the enrichment by the micronutrients has no sense. This is for the budget in the whole and for education in particular - inefficiently wasted food and labor resources, for parents - undue financial burden because the child at home eats necessary for feelings of satiety quantity of products (if any), but often against the advice on nutrition and healthy food choices. Based on the foregoing the criteria of the nutrition service quality must be physical and financial availability, on the one hand, compliance with the regulatory framework – on the other hand and the high value of customers' satisfaction - with the third" (Rozhdestvenskaya, 2013).

Discussions and Conclusion

There are a number of methodical guidelines and research of discussion nature on organization of school nutrition. Some experts propose to address the issue of school nutrition as a condition of physical development and physical training of students (Kuchma, Rapoport & Gorelova, 2008).

In the context of scientific papers of L.N. Rozhdestvenskaya (2013), "on the inefficient use of resources involved, as personal parenting resources, so budget allocations" the problem is identified that caused the rejection from school nutrition. The authors emphasize that for children are very important the cultural, polite attitude, attitude of staff, the psychological atmosphere, aesthetic design of the room, utensils (Tapeshkina & Klishina 2013).

The system of organization of quality nutrition requires an integrated interdisciplinary scientific research (medical, psychological, sociological, pedagogical, economic Sciences). Especially important physiological period for formation of the child's body is the school age (7-17 years) when the child is subjected to influences of the external environment and experiencing its serious



impact. Therefore the system of healthy and balanced diet at school should be given special attention.

When creating a system of management of the organization of school nutrition it should be guided by efficient distribution of responsibilities and powers between the interested ministries and departments. For planning, coordination, control and monitoring of the quality of school nutrition, it seems appropriate the establishment of interdepartmental working groups, including representatives of the pedagogical public associations, parent community.

In the organization of school nutrition, the following points should be taken into account: analysis of the current situation for school nutrition in particular educational organizations; the exchange of experiences with other regions with a positive experience in improving of school nutrition; in connection with the implementation of the all-Russian sports complex "Ready for labor and defense" the conduction of monitoring of the quality of school nutrition, together with monitoring of physical development and physical readiness of children; analysis of satisfaction of children and parents with the quality of school nutrition by public experts; organization of systematic education and information on nutrition culture as part of a safe lifestyle for children, parents, leaders and teachers of the schools in the form of seminars, webinars and conferences.

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Notes on contributors

Raisa I. Platonova – doctor of Sciences (Pedagogy), Professor of the Institute of physical culture and sport of North-Eastern Federal University. Yakutsk, Russia.

Uljana M. Lebedeva – candidate of medical Sciences, leading researcher, head of Center for nutrition of research Institute for health North-Eastern Federal University. Yakutsk, Russia.

Anna G. Cherkashina - doctor of Sciences (agriculture), Professor of Agricultural Academy of Yakutia. Yakutsk, Russia.

Liliya I. Ammosova - candidate of Sciences (Pedagogy), Asst professor of the Institute of physical culture and sport of North-Eastern Federal University. Yakutsk, Russia.

Alena M. Dokhunaeva – Junior researcher research Institute for health North-Eastern Federal University. Yakutsk, Russia.

References

- Ahmadullina, H.M., Akhmadullin, U.Z., Zulkarnaeva, A.T. (2014). On the question of satisfaction with the quality of school meals: through the eyes of the students' parents. *Modern problems of science and education*, 6, 12-19.
- Artemyeva, N.K., Lavrichenko, S.P. (2014). Influence of dietary intake on the health of children of primary school age. *Pedagogical-psychological and medical - biological problems of physical training and sports*, 4 (33), 23-28.

- Badertdinov, R. R. (2014). Neurophysiological and evolutionary bases of the regulation of nutrition behavior. *A young scientist*, 3, 767-772.
- Degteva, G. N. & Zubov, L. A. (2003). Healthy educational environment, healthy child. *Human ecology*, 6, 52-55.
- Dolgoplova, S.V. (2015). Actual problems of school meals and ways of their solution. *Azimuth research: Economics and Management*, 1 (10), 41-43.
- Dolmatova, I. A., Zaitseva, T. N. & Ryabova, V. F. (2015). Managing of quality in the organization of school nutrition. *Actual problems of modern science, technology and education*, 1, 212-216.
- Kadnevsky, V. M. & Dolgusheva, A. N. (2012). School nutrition maintains the health of our children. *Public Education*, 7, 125-130.
- Kargina, T.F. (2009). Modern school food system as one of the areas of health protection and promotion. *Public health and environment*, 9, 32-34.
- Khrebtova, A.Y., Goreva, E.A. Petrenko, A.V. (2015). Stereotypes nutritional status of children in the school community. *Scientific notes University. PF Lesgafta*, 4 (1220), 190-196.
- Krutova, L.N., Markovskaya, N.V., Nekroenko, R.P. (2016). Rationalisation of nutrition of school-age children. *Journal of scientific conferences*, 2-5 (6), 64-66.
- Kuchma, V. R., Rapoport, I. K. & Gorelova, J. Y. (2008). The concept of monitoring of the state of students' health during the implementation of pilot projects on perfection of catering services in schools. *The health of the population and environment*, 7, 5-10.
- Ladodo, K. S., Borovik, T. E., Semenova, N. N. & Surzhik, A.V. (2009). The formation of proper nutrition behavior. *Attending physician*, 1, 105-112.
- Magomedov, G.O., Zatsepilina, N.P., Lygin, V.V. (2014). Topical issues of school food according to age physiological needs. *Bulletin of Voronezh State University of Engineering Technology*, 3 (61), 93-98.
- Mennella, J. A. & Bobowski, N. L. (2015) The sweetness and bitterness of childhood: Insights from basic research on taste preferences. *Physiology and Behavior*, 1, 99-112.
- Muskhanova, I. V. (2011). Theoretical-methodological bases of ethno-pedagogical research. *Bulletin of the Academy of Sciences of the Chechen Republic*, 2, 224-229
- Nagaeva, I.A. (2014). Competence approach to school feeding. *Informatics and Health*, 10 (259), 63-65.
- Petrova, T. N. & Kuznetsova, L. V. (2014). On the foundations of cultural-historical and spiritual-moral upbringing. *Education and self-development*, 4, 211-215.
- Platonova, R.I., Levchenkova, T.V., Shkurko, N.S., Cherkashina, A.G., Kolodeznikova, S.I. & Lukina, T.N. (2016). Regional Educational Institutions With in Modern System of Education. *IEJME-Mathematics Education*, 11(8), 2937-2948.
- Rozhdestvenskaya, L. N. (2013). Catering services in educational institutions: problems and solutions. *The world of Economics and management*, 2, 84-94.
- Shamaeva, A. M. (2010). School nutrition – a serious management challenge. *Public education*, 10 146-152.
- Sharipov, M. M. (2010). Socio-economic efficiency of state policy in the field of school nutrition. *Humanization of education*, 2, 105-112.
- Sharipov, M.M. (2010). Experimental system "lunch box" school feeding: problems, successes *Bulletin Vyatka State Humanitarian University*, 4, 86-90.
- Solovyova, V.K. Kuznetsov, S.A. (2008). Improvement of school meals system. *The first step School Technology*, 1, 123-127.
- Tapeshkina, N. V. & Klishina, M. N. (2013). Organization of school nutrition in modern conditions: problems and solutions. *Siberian medical journal*, 7, 113-117.
- Zakirova, D. R. & Baryshnikova N. I. (2014). School nutrition: challenges and solutions. *The generation of the future: a View of young scientists: proceedings of the 3rd International youth scientific conference*. Moscow, 100-103.
- Zhidkov, V. E., Chimonina, I. V. & Katunina, I. V. (2016). A comparative analysis of school nutrition in USSR and modern Russia. *Journal of science and art*, 1, 38-43.