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The role of the school in the formation of energy saving culture among the participants of the educational process

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Abstract

The article is devoted to the analysis of the possibilities of secondary school in solving the problems associated with the construction of the system of formation of energy saving culture among the participants of the educational process. Energy saving in school is considered as a process of solving a complex set of problems related to management, technical re-equipment, organization of the educational process and educational activities. The necessity and possibilities of involvement of heads of educational organizations, teachers, students and their parents, authorities, business representatives and the public in this process are substantiated. The challenges facing our country in the field of energy saving and reducing the energy intensity of the gross domestic product are not only technological, managerial, but also environmental aspects, solved by scientists, engineers and managers. Energy saving is a field of activity directly related to the behavior and thinking of energy consumers, that is, the population itself. It is obvious that successful results here can be achieved only if society as a whole, and each of its members individually will change its attitude to the use of energy resources. It is the formation of a culture

of efficient use of energy in society, as an important part of the ecological culture of modern man, that will ultimately increase the competitiveness of the Russian economy, preserve harmony with nature, and save energy resources for the next generations of Russians.

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Keywords

Educational system, formation of culture of energy saving, culture of the person in the sphere of energy saving, pedagogical conditions formation of culture of energy saving.

Introduction

The culture of energy saving is usually considered by the authors as "a system consisting of a number of interrelated elements and characterized by a certain level of knowledge, the nature of thinking, feelings and activities". Under the culture of energy saving, we understand one of the forms of self-organization of the individual, aimed at voluntary and conscious restriction on energy consumption.

Despite the extreme importance of the formation of a culture of energy saving and its recognition as one of the important tasks for the education system of the Russian Federation by the top leadership of the state, the situation in this direction can not be considered satisfactory.

Main part

It is generally recognized that one of the main directions of solving a complex set of problems in the field of forming a culture of energy saving is the creation of an effective educational system. Such a system should determine the basis of the national policy in the field of education and education of the population of Russia on energy conservation in the coming decades and include an integrated program of scientific, educational, informational, technical and organizational measures. Today we can state that the educational community has an understanding of what such a system should look like. General contours of such educational system and requirements to it are designated in works of A. N. Fedorov, G. A. Yagodin [Fedorov, 2009].

Within the framework of functioning of such information and educational system it is necessary to solve the following main tasks:

- training of specialists of different levels and teaching staff in the field of energy saving, energy efficient technologies and energy management;
- awareness-raising and educational work with the population on the problems of energy saving;
- training of teachers and pedagogical staff, capable of solving problems of education of various strata of the population towards energy saving;
- development of educational-methodical and information support of education and education in the field of energy saving;
- strengthening the role of the mass media in the information and propaganda work among the population on energy conservation and state policy in this direction.

The state initiatives of recent years in the field of environmental protection, greening of production, introduction of nature-saving technologies, increase of energy efficiency of economy, modernization of school sharply raise a question of necessity of comprehension of the theory and practice of education in the sphere of energy efficiency and energy saving [Fedorov, 2009].

The global nature of the problem of rational use of energy, a direct correlation between environment and the economy require to consider it within the concept of sustainable development – a systemic vision of the future in which issues of economic and social development brings together conservation and restoration of the environment. This approach is extremely relevant for solving the problems faced by the education system of the Russian Federation in the field of forming a culture of energy saving.

In the study of D. S. Ermakov, D. A. Slavinsky, S. A. Chernikova it is noted that the positive experience in the formation of a culture of energy saving among the participants of the educational process is available in the activities of individual educational organizations of different types and types [4]. They carry out work on a wide range of areas using modern forms, tools and methods. However, the successful experience of such organizations is difficult to translate into broad practice due to the lack of elaboration of a number of General issues. Until now, there is no clear description in the literature of the conditions for the effective formation of a culture of energy saving at each level of the Russian education system.

The purpose of this article is to analyze the possibilities of secondary schools in solving problems associated with the construction of a system of formation of energy saving culture among participants of the educational process.

The school is one of the key tools for the formation of a culture of energy and resource conservation among the population of the Russian Federation. Energy saving in school as an educational institution is a process of solving a complex set of problems. It is in the school that the foundations for training future specialists in the field of energy saving are laid, the tasks related to energy management and technical re-equipment of educational institutions, the organization of the educational process, educational activities and much more are solved.

Today, in accordance with Federal law No. 261 of November 23, 2009, each educational institution of the Russian Federation is obliged to significantly reduce its own energy costs, reducing the load on the environment, receiving economic benefits. At the same time, students and teachers can directly participate in the energy saving program, which allows them to form an idea of the importance and possibility of energy saving in their minds, to get a real experience of energy saving behavior. This process can and should involve OU leaders, teachers, students and their parents, authorities, business and the public.

As M. V. Argunova rightly notes, the formation of a culture of energy saving makes it possible for education for sustainable development to turn into an essential vector of development of a modern school, allowing to build around this large, truly system-forming idea, a real activity close and understandable to the educational community[Argunova, 2009].

In school education the culture of energy saving develops in unity of processes of training, education and development of the person. Training provides assimilation of system of knowledge about the problems connected with energy saving, development of system of intellectual and practical skills on studying, an assessment and improvement of a condition of energy consumption at school and at home. Education creates conditions for the formation of students ' needs (motives, motives) behavior and activities aimed at compliance with the norms of effective use of energy. Development involves the formation of the ability to analyze and assess the state of energy conservation problems, the belief in the possibility of solving them, the desire to disseminate relevant knowledge and personal

participation in practical Affairs on the effective use of energy.

Formation of culture of energy saving at participants of educational process at school can be carried out at three levels.

The first level (information and cognitive) makes it possible to solve educational and educational tasks in the field of energy conservation. It is characterized by subject-object relations of the teacher and students with a predominance of verbal methods of teaching.

The second level is operational and activity. Its implementation allows you to form the appropriate skills: to perform laboratory observations and research, to assess the degree of energy efficiency of lighting equipment and building envelope, to simulate the situation on the computer, to monitor the flow of water, heat and electricity. This level is also characterized by subject-object relations, but operational activities that allow to obtain objective information about the efficiency of resource and energy use, contributes to an in-depth understanding and awareness of the situation with energy conservation in the school and possible ways to improve it. The implementation of this level requires the creation of the material base of the educational process, equipping with the necessary tools, devices, materials, programs.

The third level is practice-oriented. At this level, the participants of the educational process are in subject-subject relations. The content of energy-saving activities in this case is aimed at reducing the loss of heat, water, electricity. The implementation of this level ensures the formation of stable ecological knowledge and social qualities of participants of educational process.

The importance of preserving the unity of socio-oriented and personality-oriented approaches should be emphasized in the formation of a culture of energy saving among schoolchildren. This allows them to form the necessary knowledge, skills, creates conditions for the value-semantic development of their personality, promotes the inclusion of students in the solution of real practical problems.

The success of the process of forming a culture of energy saving depends on the set of certain pedagogical conditions that must be purposefully created, function and develop on a scientific basis. As such, we consider it important to highlight:

- continuity of education in the field of energy saving;
- unity of cognitive and practical-transformative activity;
- activation and expansion of experience of energy saving at pupils through participation in real energy saving activity;
- interrelation of educational and extracurricular work on energy saving;
- taking into account the age characteristics of students;
- taking into account regional and local features, specifics of educational institution.

The formation of a culture of energy saving is carried out in the course of the pedagogical process, the main content of which is integrated in the relevant subjects in the study of physical, chemical, biological and other phenomena and processes related to the production, transformation, transportation and use of different types of energy. In the light of the problem under consideration, almost every academic subject has certain capabilities and this potential should be systematically used.

Compatibility and complementarity of educational and extracurricular work on the problem of energy saving plays a great importance for obtaining the necessary result. Special mugs, clubs, laboratories, class hours, promotions and competitions can make a significant contribution to the formation of a culture of energy saving of schoolchildren.

The educational process in the field of energy saving should be carried out continuously in accordance with the levels of General education-primary, primary and secondary schools. At each stage, the deepening and expansion of the content of knowledge and skills in the field of energy

conservation, the range of subject activities and value relationships.

The system of additional education has a serious potential in the formation of a culture of energy saving of schoolchildren. Its institutions complement the work of the school organically, with obvious advantages in relation to the freedom of students to choose activities of interest. There are ample opportunities for individual work with each child through the involvement of his independent research work, which contributes to the disclosure of the abilities of children who failed to realize themselves in the school team.

Within the framework of the problem of formation of energy saving culture among the participants of the educational process the school needs to solve a number of problems:

- definition of regional features;
- analysis, selection and approbation of school education programs;
- definition of the main directions, forms, methods, pedagogical technologies of formation of energy-saving activity of pupils;
- development of approaches to the organization of energy-saving activities of schoolchildren;
- implementation of relations with various structures engaged in education and education in the field of energy conservation;
- implementation of educational activities in the immediate school environment.

One of the most important conditions for the success of an educational institution's activities in the field of energy saving is the level of professional competence of the administration and teaching staff of the school. The problem requires the creation of a system of training, advanced training and professional development of education workers who are able to solve the problems of education and education in the direction of energy conservation. This implies the following:

- formation of motivation of teachers to energy saving activities;
- increasing the level of theoretical and practical training of teachers and school administration on energy conservation;
- acquaintance of teachers with forms, methods of training and control of level of readiness of pupils on energy saving.

An important place in solving these problems is occupied by the work of school methodical associations, allowing to organize the efforts of teachers in the following areas:

- subject-oriented, developing didactic and methodological problems in the course of individual subjects;
- interdisciplinary, developing didactic problems of interdisciplinary nature;
- complex-oriented, carrying out multidimensional development of problems of an integrative nature.

For the effective organization of the educational process, it is necessary to provide teachers with appropriate teaching materials, and students with appropriate teaching AIDS. This involves the creation of special working groups engaged in the development and writing of such manuals, the preparation and improvement of appropriate model programs for schools of different levels and other educational organizations. In modern conditions, the creation and active functioning of such an educational and methodical complex, including software, scientific and methodological, didactic support and educational and laboratory equipment, involves the maximum use of the possibilities of information and communication technologies.

The system solution of problems of energy saving in school promotes the solution of the most important task-creation of a complex of conditions (pedagogical, psychological, information, organizational, technological) providing development at all participants of educational process of

qualitatively new attitude to the world in which we live, to the behavior. Together, students and teachers must find reserves of energy savings in school and at home, in the immediate environment, to use the simplest available measures of energy conservation and energy efficiency. This will allow the school to become a real operating structure designed to coordinate energy-saving activities of students and teachers, parents and the public, local authorities and business, to bridge the gap between "word" and "deed", to move from awareness of global problems to personal concrete actions.

Conclusion

Based on the above, we can draw the following conclusions:

1. The school is one of the key tools for the formation of a culture of energy and resource conservation among the population of the Russian Federation. The school lays the foundations for training the younger generation in the field of energy conservation, solves problems related to the management and technical re-equipment of the educational institution, the organization of the educational process, educational activities and much more.
2. The culture of personality in the sphere of energy saving, as a part of ecological culture, can be considered as one of the forms of self-organization of personality, aimed at voluntary and conscious restriction on energy consumption.
3. The formation of a culture of energy saving is carried out in the course of the educational process, involving coordination and complementarity of educational and extracurricular work on the problem of energy saving.
4. An important condition for the success of the educational institution in the field of energy saving is the level of professional competence of the administration and teaching staff of the school. This requires the creation of a system of training and professional development of education workers who are able to solve the problems of education and education in the direction of energy conservation.

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Роль школы в формировании энергосберегающей культуры среди участников образовательного процесса

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Аннотация

Статья посвящена анализу возможностей средней школы в решении проблем, связанных с построением системы формирования энергосберегающей культуры среди участников образовательного процесса. Энергосбережение в школе рассматривается как процесс решения сложного комплекса проблем, связанных с управлением, техническим переоснащением, организацией учебного процесса и образовательной деятельностью. Обоснована необходимость и возможности вовлечения в этот процесс руководителей образовательных организаций, учителей, учащихся и их родителей, представителей власти, представителей бизнеса и общественности. Задачи, стоящие перед нашей страной в области энергосбережения и снижения энергоемкости валового внутреннего продукта, представляют собой не только технологические, управленческие, но и экологические аспекты, решаемые учеными, инженерами и менеджерами. Энергосбережение - это сфера деятельности,

непосредственно связанная с поведением и мышлением потребителей энергии, то есть самого населения. Очевидно, что успешных результатов здесь можно достичь только в том случае, если общество в целом и каждый его член в отдельности изменит свое отношение к использованию энергоресурсов. Именно формирование культуры эффективного использования энергии в обществе, как важной части экологической культуры современного человека, в итоге повысит конкурентоспособность российской экономики, сохранит гармонию с природой и сохранит энергоресурсы для следующего поколения россиян.

Для цитирования в научных исследованиях

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Ключевые слова

Образовательная система, формирование культуры энергосбережения, культура личности в сфере энергосбережения, формирование педагогических условий культуры энергосбережения.

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