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INTRODUCTION OF SMART-CONTROL OF ELECTRICAL EQUIPMENT AMONG MODERN YOUTH

Abstract. As a result of constant stressful situations and information load, the concentration of attention, and the level of control of a single mechanical process in the younger generation decreased. And since the human brain cannot respond to several stimuli, always choose the most interesting or most aggressive, it is possible to forget to disconnect from the mains of household appliances (irons), and as a consequence - a fire. The following conclusions are made in the work: intensification of the educational process significantly increases the degree of psycho-emotional and information load on children and adolescents, as well as contributes to the emergence of extreme and fire-hazardous situations when using household appliances; the device created by us gives the chance of control over the worker at work of household electric appliances; the economic efficiency of the device is reflected through various cost indicators that characterize the intermediate and final results of production at the enterprise, organization or family, it is more than one billion hryvnias in the first year of implementation of the device; social efficiency of use of the device consists in increase of fire safety of the population, safety of life, etc.; local (commercial) efficiency of the used device will be determined in concrete results of production and economic or other activity of the enterprises which will be involved in production of devices, and also establishments which will be able to use household appliances safely; the comparative efficiency of the use of the device reflects the consequences of comparing possible variants of similar devices, provided that they exist, and choosing the best of them.

Keywords: health technologies, security, smart devices, electrical appliances.

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ВПРОВАДЖЕННЯ SMART-КОНТРОЛЮ ЕЛЕКТРООБЛАДНАННЯ СЕРЕД СУЧАСНОЇ МОЛОДІ

Анотація. У результаті постійного перебування у стресових ситуаціях та інформаційного навантаження знизилась концентрація уваги та рівень контролю окремо взятого одного механічного процесу у підростаючого покоління. А оскільки мозок людини не може реагувати на декілька подразників, обирається завжди найцікавіший або найагресивніший, тобто можливе забування вимкнення із електромережі побутових електроприладів (праски), і як наслідок – виникнення пожежі. В роботі зроблено наступні висновки: інтенсифікація навчального процесу суттєво збільшує ступінь психо-емоціонального та інформаційного навантаження на дітей та підлітків, а також сприяє виникненню екстремальних і пожежонебезпечних ситуацій при користуванні побутовими електроприладами;

створений нами прилад надає можливість контролю за працюючим при роботі побутових електроприладів; економічна ефективність використання приладу відображається через різні вартісні показники, що характеризують проміжні та кінцеві результати виробництва на підприємстві, організації чи у сім'ї, вона становить більше одного мільярда гривень у перший рік впровадження приладу; соціальна ефективність використання приладу полягає у підвищенні пожежної безпеки населення, безпеки життя тощо; локальна (комерційна) ефективність використаного приладу визначиться у конкретних результатах виробничо-господарської чи іншої діяльності підприємств, які будуть задіяні у виробництві приладів, а також установ, які будуть мати змогу безпечно використовувати побутові електроприлади; порівняльна ефективність використання приладу відображає наслідки порівняння можливих варіантів аналогічних приладів, за умови їх існування, та вибору кращого із них.

Ключові слова: *здоров'язберігаючі технології, безпека, смарт-засоби, електропобутові прилади.*

Protection of material values, life, and health of people, all forms of ownership from fires in modern conditions is one of the urgent tasks of the state and society. Analysis of data on domestic fires in recent years in Ukraine shows that there is a problem of increased fires, which lead to death, injury, and significant material damage. Thanks to the modern achievements of science and technology, many different means of preventing fires in the home and extinguishing them have been created. Moreover, with scientific and technological progress, the problem of fighting fires becomes more acute as new powerful sources of energy fall into human hands, and the number of potential sources of increased danger increases at a rate at which the damage from their use becomes greater. Saturation of apartments with various gas, electrical appliances, and chemicals poses a significant risk of fire in the apartment in the event of even the slightest violation of fire safety regulations. This leads to the fact that fires occur in residential buildings much more often than in public or industrial buildings. A common cause of fires in the home is a violation of the rules of the use of electrical appliances. Analysis of such fires shows that they occur mainly for two reasons: in case of violation of fire safety rules when using electrical appliances and hidden defects of household appliances. Every day in Ukraine there is an average of 168 fires and fires (in 2002 this figure was 164), economic losses from which amounted to 1210 thousand UAH. The average in Ukraine is 65.7%. From the above statistical facts, it is possible to come to a natural assumption that everything is done to prevent fires, but these actions are not enough.

As a result of constant stressful situations and information load, the concentration of attention, and the level of control of a single mechanical process in the younger generation decreased. Due to the lack of time, adolescents perform several mechanical processes simultaneously [1]. For example, it has become very common now to cook with the TV on, or to iron and listen to music or talk on the phone. And since the human brain cannot respond to several stimuli, always choose the most interesting or most aggressive, it is possible to forget to disconnect from the mains of household appliances (irons), and as a consequence – a fire.

Let's try to consider some systems of fire prevention in the home. Modern irons have a fire safety system Auto Shut off - automatic shutdown of the device. If a person forgot to turn off the iron and it is in a horizontal position, then after 30 seconds it will be automatically disconnected from the mains. If the iron is in a vertical position, the shutdown will occur in 8 minutes. In most models of irons studied during the research, these functions are present simultaneously. But the great idea of the inventors again crashed into the economic principles of manufacturers, as the chip responsible for these functions is placed on the platform of the device, and to prevent steam on it, filled with waterproofing resins, which do not allow to repair the system in case of failure. That is, being on the inner surface of the working platform of the iron, the fire safety system is constantly in a zone of high temperature, and therefore, despite the world-famous brands, often fails, when repaired - to preserve basic functions, completely removed in a simplified system. Moreover, the owner of a household appliance will never be able to say

exactly when it stopped working, which means that there is a potential risk of fire if the owner hopes for work electronics. Examining the fatigue of modern schoolchildren [2,3], we found that general psycho-emotional fatigue occurs at different intervals in different groups of students, as well as the fact that such intervals are deeply individual. Yes, it is convenient for most students to develop a schedule of lessons in the school, recreation programs, but you can never say with 100 percent confidence that these activities are acceptable to all students. That is why we have created a device-controller for the personal supervision of students while working with household appliances.

The device is based on knowledge of radio electronics and experience in using household appliances at home and school. If desired, everyone can make individual adjustments to the proposed method. Our method consists of several stages, each of which can be independent or additional to the other. The general principle is constructed in such a way that it can be "overgrown" with additional stages of different orientations. The developed device, on the one hand, is connected to a source of a direct current, in household conditions it serves as usual sockets, on the other hand, it includes the household electric appliance (an iron), while our appliance must be on an ironing board or other work surface, next to a teenager or under other conditions by a person who will work on the appliance. After pressing the red start button (on) and the indicator LED on the appliance panel lights up, the voltage starts to flow to the appliance through our appliance, and the power continues as long as the person is near the switched on iron. When leaving a dimmed electrical appliance unattended (or no ironing, in our case), the appliance we designed works after the time set on the timer, and the working appliance switches off automatically, and the phone, which was previously recorded in our appliance, receives a call about the accident. disconnection. Subsequent start-up of the appliance and continuation of ironing is possible only after pressing the start button again.

The modern development of the world economy and its impact on regional economic entities, national economic systems, determine the transformation of the type of social production. Today, most countries around the world set their own development priorities based on the nation's intellectual capital. It is a well-known fact that leading countries ensure their development at the expense of science-intensive innovation-oriented industries.

Under such conditions, the labor and intellectual capital of the Ukrainian nation is almost a key factor in ensuring long-term competitiveness, geopolitical security, and efficiency of economic development. Similar views are shared by governments and EU countries, which today invest heavily in the development of the education system, maintaining creativity at all stages of educational, qualification, and cultural training of citizens. Taking into account all the above, it should be noted that the problems of school education are of particular importance as the basis of the future of our state and the basis of the intellectual capital of the nation. Despite this, the problem of student safety in the general educational cycle has many aspects, but they are all equally important and relevant today.

On the one hand, studying at school is preparing for university or vocational education. At the same time, preserving the health and life of a student is one of the ways to create the future of our state, increase its intellectual and labor potential. It is well known that the effectiveness of implementing a particular invention, project, or innovation proposal is based on taking into account the results and costs incurred to achieve them. Thus, we will try to predict the possible results of using our author's solution.

In total, information was received from about 14.2 thousand individual institutions of general secondary education, where 3.9 million students study and 438.5 thousand teachers work. The total expenses of these schools in 2019 amount to UAH 94.1 billion. the average national expenses for training one student in 2019 amounted to UAH 23.1 thousand per year. The essential characteristic of production efficiency (system performance) is reflected in the general methodology for determining it. The evaluation of the effectiveness of an invention should be based on indirect evaluation methods. Reducing risks in everyday life will help preserve the health of young people and thereby reduce the cost of treatment, etc. These expenses also include expenses for health care and Prevention of children's diseases, approximately in the amount of 10-15%, that is, 2300-2800 UAH. Let the use of our author's invention reduce the level of fires and reduce the incidence and mortality of students by 5%, according

to calculations of the cost of material damage that they bring to the country – this is 60500 UAH per year. So, the annual savings per student will amount to 125 UAH.

On a national scale, it is easy to calculate the total savings by generating a significant amount by the total number of students. So, 125 UAH. multiplied by 3.9 million students will give a million. on a national scale, and adding material damage from fires, we will receive 487 million rubles. UAH on the scale of the country. If students are included in the calculations, the amount of annual savings will increase. The next step should be to calculate the cost of manufacturing the author's device, as well as to develop certain standards for using the device. According to the most general estimates, the first batches of prototypes can provide a cost price of 450 UAH, but on an industrial scale, gross costs can certainly be reduced (by saving on fixed costs). Note that the device should be purchased by every student, as well as a student. Thus, total expenses will amount to 1 1.755 million. and the profits of the country, manufacturer, and users, as can be seen from simple calculations, will amount to millions of hryvnias within the country.

Therefore, even in the first year of using the author's device, not only the economic benefits of the country are possible, but also the preservation of the state's potential, which is provided to it by the younger generation.

Conclusions

1. Intensification of the educational process significantly increases the degree of psycho-emotional and information load on children and adolescents, as well as contributes to the emergence of extreme and fire-hazardous situations when using household appliances.

2. The device created by us gives the chance of control over the worker at work of household electric appliances.

3. Economic efficiency of use of item The scale is reflected in various cost indicators that characterize the intermediate and final results of production at the enterprise, organization, or family, it is more than one billion hryvnias in the first year of implementation of the device.

4. Social efficiency of use of the device consists of an increase in fire safety of the population, the safety of life, etc.

5. Local (commercial) efficiency of the used appliance will be determined in concrete results of production and economic or other activity of the enterprises which will be involved in the manufacture of devices, and also establishments which will be able to use household appliances safely.

6. Comparative efficiency of use of the device reflects consequences of comparison of possible variants of similar devices, provided their existence, and a choice of the best of them.

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