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FEATURES OF USING INTERACTIVE CASE TECHNOLOGIES FOR DEVELOPING ACCEPTABLE RISK SKILLS ON THE EXAMPLE OF THE COURSE "LIFE SAFETY"

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Abstract

The article covers the organization of students training using the case study method in combination with a heuristic task when mastering the discipline "Life safety". The undoubted advantage of the new pedagogical technology is the development of universal and basic professional competencies, the creation of an educational product for students and the evolution of their personal qualities. These skills are the basis for the formation of a life safety culture of the future specialist, which is in demand in any field of activity.

Keywords

sustainable development, safety, danger, risk, interactive case technologies

I.INTRODUCTION

Sustainable development of society and security are two synchronistic concepts that are of great importance when choosing goals and ways to achieve a high material and spiritual level of people.

Sustainable development is development that meets the needs of today's world situation, when there is a redistribution of spheres of influence of world powers, without jeopardizing the ability of future generations to meet their natural needs. The term was coined internationally at the United Nations Conference on Environment and Development (Rio de Janeiro, 1992). Based on the recommendations of the United Nations Conference defining the principles of a coordinated policy of sustainable development of the world community and conservation of the biosphere, Uzbekistan developed the " Concept of National Security of the Republic of Uzbekistan (Decree of the President of the Republic of

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Uzbekistan No. 467-I of August 29, 1997)", " Concept and National Strategy for Sustainable Development of the Republic of Uzbekistan "(1998).

II. MAIN PART

In Uzbekistan, as in most countries of the world community, the concept of "acceptable risk" (ALARA — as low as risk acceptable) is currently adopted, which allows using the principle of "anticipate and warn". This generally accepted concept has four main principles. The first principle is the justification of risk management activities, which are consistent with the strategic goal of risk management, that is, the desire to ensure material and spiritual benefits, with the obligatory condition: practical activities cannot be justified if the benefits of this activity in general, it does not exceed the damage it causes. The second principle is to optimize protection based on the average life expectancy in society. The ideal option is considered to be a balanced cost of extending life by reducing the level of risk and at the expense of the benefits received from economic activities. The third principle is the need to take into account the full range of existing hazards; availability of information on risk management decisions to the general public. The fourth principle is to take into account the requirements for not exceeding the maximum permissible environmental loads on ecosystems. It consists in the fact that ensuring the safety of people living today should be achieved by implementing solutions that do not compromise the ability of nature to ensure the safety and human needs of the future generation.

Figure 1 shows the risk analysis. The source of danger (nuclear power plant, airplane, car, etc.) is selected, the hazards inherent in it are analyzed, the risks of damage caused by them are assessed, and the risk management method is selected.

The method of risk management is determined by many factors, including economic ones. A modern approach to risk analysis is the method of analysis "from the object of danger" (Fig.2).

Here you can distinguish three main objects of danger: a person, the natural environment, and society (the state). A person does not care what is the source of danger (for example, the source of mechanical impact: a car, a mechanism, or their own carelessness). With the same impact on time and force, a person can get an injury that is not compatible with life. The same situation occurs when exposed to an explosion (an explosion of a gas cylinder, a technological installation, or explosives), penetrating radiation (radiography, an explosion of a nuclear reactor, or working with radiation sources), toxic effects (car emissions or thermal power plants, chemical accidents, or chemical weapons), and so on.

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The difference between the method of risk analysis "from the source of danger" and risk management is that management is based on safety expertise, which is carried out using human, environmental and social safety criteria. Security criteria are established on the basis of the concept of sustainable development, socio-economic development goals ("everything for the good of man", oligarchs ' enrichment, the "golden billion" theory, etc.) and security goals and principles of acceptability (acceptable risks). A security criterion is a specific parameter that restricts determine the negative impact of dangerous and harmful environmental factors on the object of danger so that its condition does not deviate from the existing one by more than a given amount (usually 5 %). For a person (as an object of danger), there is an individual safety criterion; for society-social, legal, demographic, technical and other safety criteria; for the natural environment — biological, ecological, landscape, geographical and other safety criteria. Individual safety criteria (medical or sanitary) limits from above the negative impact of the environment on humans. As particular individual safety criteria, well-known values are used, such as the maximum permissible concentration (limits toxic exposure to dangerous chemicals and dust), the effective dose of radiation exposure Eeff (radiation exposure), the noise intensity LA (acoustic exposure), and so on. When choosing a technical safety criterion, different approaches can be used depending on what is a priority: human health (in the UK-the inadmissibility of accidents with the death of more than 100 people), accidents in which more than 5 % of different animal species are negatively affected, technical systems (accidents with melting of the reactor core ("beyond design limits" radiation accidents), accidents accompanied by explosions, etc.).

To increase the level of security, funds can be spent in three ways:

1) improvement of technical systems and facilities;

2) training and training of personnel;

3) improvement of emergency management.

In the first and second cases, funds are spent on reducing the probability of an accident, in the third-on reducing its scale, if it occurs. After analyzing the effectiveness of capital investments, it can be concluded that in many cases it is possible to significantly reduce the risk to the population if more attention is paid to actions in the event of an accident than to technical systems for its prevention, which do not guarantee complete safety.

Technical, organizational, and administrative methods of risk management are combined with economic methods: insurance, monetary compensation for damage,

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risk payments, etc. Risk management is based on a method of comparing the costs and benefits of risk reduction.

In order to better understand the problem of risk reduction, interactive cases were included in the teaching of the subject "Life safety" – a method of specific situations, which is based on a situational approach and activates the intellectual and creative activity of students. In the process of implementing the method of working with cases, students ' theoretical knowledge is updated, their practical skills are developed, they become more aware, students understand the essence of both life safety in general and the problems contained in it more deeply.

Case study method –study I have incorporated all the options of the development approach. These are individual student development and group training tools. Teamwork develops students ' personal qualities. The case study refers to a project technology, but there are differences from the standard options. If we take the group model of learning, then students engage in activities together, using various sources of information. After the discussion, they announce their solutions. In case study, work is built on the basis of a case study. It is both a technical task and a source from which you can take data for the following tasks: solutions to the problem. It is impossible to imagine a case study without the technology of "achieving success". This method makes students more active. Their achievements are evaluated, and competition develops. The method is based on the desire to achieve success. This is to form students ' positive motivation. If we talk about the main function of the method, it consists in teaching students to solve complex problems that cannot be solved by analytical methods. The main point is the exchange of information between the group members. Before starting work, the presenter chooses tools that help to immerse the audience in the situation. The moderator follows the discussion and helps students exchange their discoveries.

Case analysis helps you develop your analytical skills, and group discussion sharpens your communication skills. Panelists analyze various situations from everyday life, everyday life, industrial emergencies and natural disasters.

The case-study analyzes the following types of situations:

Real-life examples. Participants try to find a solution or determine that it is not possible at this stage. Students try on the role of the head of the enterprise.

Participants are asked to consider a situation where a solution has already been found. In this case, students are engaged in a critical analysis of the management decisions made. Listeners take the position of an outside observer during the discussion. For example, an industrial accident is considered.

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Case study exercise. It is solved in order to consider a complex situation or problem in more detail in practice. During the discussion, students can ask the moderator, criticize or approve of the current state of affairs.

Case study exercise. In the course of solving the problem, the best practices made earlier are applied. For example, if a building explodes and you are covered in rubble, please describe your actions.

During the discussion, the manager builds up work in the following areas:

Role-playing situations. In this case, participants study the situation in advance, and then take part in the game based on the analysis made.

Discussion in the team.

Cases are most often divided according to the degree of complexity:

Illustrative ones. An example is selected and students are trained to make the right decision.

Training programs. The basis is the study of a particular situation. Participants must make their own decisions.

Learning situations. Students should identify the problem themselves and identify ways to solve it, taking into account the available resources.

Practical exercises. The moderator describes the situation, and participants look for ways to solve the task assigned to them.

In terms of content, cases can be practical, research, or educational.

In terms of size, cases can be large, several pages long, or contain only a couple of sentences. There is no one specific way to submit information. Participants most often receive case studies in printed form or on electronic media, but tasks can be presented on video or audio media.

The process of creating cases includes the following steps:

Definition of didactic goals.

Setting goals and listing tasks.

Defining the situation that will be considered when solving the case.

Creating a program map.

It lists theses, which are later implemented in the text.

Search for an organization that can serve as an example or relate to program theses.

Collecting information.

Selecting a situation model.

Defining the genre of a case task.

Writing a text.

Diagnostics of program effectiveness.

After testing, the final version of the program is prepared.

Implementation in practice.

Preparation of methodological recommendations.

You can also include questions that help teachers lead the discussion on a given topic.

The text contains a description of the problem and shows positive and negative problems. A properly designed task corresponds to the target audience and contains enough data for analysis.

The scheme for solving the "Life Safety" case is as follows:: 1) getting acquainted with the emergency situation, its source and causes; 2) highlighting the main problem, identifying the main types of danger to the life and health of students; 3) generating ideas for brainstorming; 4) analyzing the consequences of making a decision or proposed ways out of the situation; 5) actually solving the case – suggesting the optimal one sequences of actions, evaluation of alternatives, indications of possible related problems, ways to prevent their occurrence or ways to eliminate them.

III. CONCLUSION

The accumulated world experience in solving emergency risk management problems, analysis of the real state and forecast show that this problem has quite reasonably become an important component of the state policy in the field of sustainable development of national security and the security of the international community as a whole. Applying the case method- study diagnostics of hazards, knowledge of risk factors, and the ability to predict them are important components of training a specialist in the field of safety, including a teacher of life safety.

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