

FROM THEORY TO PRACTICE: DEVELOPING SUSTAINABLE SKILLS OF ACCEPTABLE RISK AMONG STUDENTS THROUGH INTERACTIVE CASE METHOD

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Abstract. *The article discusses the relevance and methods of developing sustainable skills of acceptable risk among students in modern education. The research is based on the analysis of educational programs and teaching methods, identifying problems, and proposing practical approaches to their solution. Special attention is paid to the use of case method and interactive technologies for developing professional skills and teaching students effective risk management.*

Keywords: *acceptable risk skills, education, case method, interactive technologies, risk management, professional education.*

These days, the issue of developing skills to assess an acceptable level of risk is becoming increasingly relevant among students. This is evidenced by the adoption of various laws in this area in our country. The concept of acceptable risk plays a key role in ensuring safety in many states, as risks are present in all sectors of industry, the economy, and people's everyday lives.

This approach to risk is built on a balance between potential benefits and possible threats or negative consequences. In modern society, students must possess not only a theoretical understanding of risks but also practical skills in assessment, management, and mitigation of risky situations.

Effective mastery of the concept of acceptable risk is crucial for the future professional and personal lives of students. After all, they encounter risks at various stages of their careers, whether it be entrepreneurship, scientific research, or making key decisions in the public sphere. Thus, teaching students skills in risk assessment and management is an integral part of their education.

It is important to note that the development of these skills not only enhances the safety and resilience of society but also contributes to innovative development and economic prosperity. Students who have mastered the ability to assess risks adequately are more prepared for entrepreneurship and making unconventional decisions, which promotes the development of competitiveness and the creative potential of society.

Therefore, the integration of the concept of acceptable risk into the educational process is an important step in preparing students for the modern challenges and opportunities they will encounter in their future careers and lives.

In many educational institutions both in our country and abroad, alongside the discipline of "Life Safety," other courses are also studied, such as "Civil Defense," "Industrial Sanitation and Hygiene," "Fire Safety," "Technogenic Safety," and "Electrical Safety."

The curriculum for life safety provides the fundamental concepts and definitions necessary for safe work in various areas of life. This includes an understanding of electrical safety, fire safety, electromagnetic safety, as well as the basics of using various types of lighting and the impact of noise on the human body and the environment.

To determine the priority directions for the use of pedagogical technologies in the educational process, an analysis of the Life Safety course was conducted at the Tashkent University of Information Technologies, Tashkent State Technical University, Perm National

Research Polytechnic University, Belarusian State University of Informatics and Radioelectronics, and the University of Minnesota, USA.

Table 1 Analysis of the Life Safety Course

<i>Tashkent University of Information Technologies (TUIT) in Uzbekistan</i>	<i>Tashkent State Technical University (TSTU) in Uzbekistan</i>	<i>Russia, Perm National Research Polytechnic University</i>	<i>Belarus, Belarusian State University of Informatics and Radioelectronics</i>	<i>United States of America, University of Minnesota</i>
60 hours of classroom instruction	64 hours of classroom instruction	52 hours of classroom instruction	76 hours of classroom instruction	90 hours of classroom instruction
Cluster, brainstorming, Venn diagram, "I know, I learned, I want to learn"	Cluster, brainstorming, Venn diagram, "I know, I learned, I want to learn"	-Problem-based learning technologies -Research-based learning technologies	Problem-based modular learning technologies Research-based learning technologies Project-based learning method-кейсы	Project method Assessment of Occupational Health and Safety and Safety Techniques by Industry Team presentation Case studies

From the data presented in Table 1, it becomes clear that:

Most countries have approximately the same number of total hours (60-68 hours for classroom sessions) devoted to studying the academic discipline "Life Safety";

The degree of similarity in topics is around 82%;

Differences are found in the sequence of studying topics;

The theme of acceptable risk is included in all educational programs.

Life safety entails creating conditions that ensure the normal functioning of humans and protect them and the environment from hazardous and harmful factors, whether natural or man-made. The fundamental principle of this field is the prevention of real and potential risks.

The primary goals of life safety include identifying hazardous and harmful factors generated by elements of the environment, developing and implementing new protection methods, as well as modeling and forecasting emergencies. These tasks are aimed at ensuring safety both in the workplace and in everyday life.

Understanding and applying the principles of life safety are key competencies for anyone striving to ensure safety both in the workplace and in the public sphere. These knowledge and skills not only contribute to the preservation of lives and health but also strengthen public well-being and resilience.

The concept of acceptable risk plays an important role in educating students within the discipline of "Life Safety." It encompasses a wide range of principles, methods, and practices aimed at ensuring safety in various spheres of human activity. Within this discipline, students study fundamental aspects of safety, including risk management, incident prevention, and the development of response strategies.

The concept of acceptable risk involves balancing potential risks with the benefits that can be gained from engaging in certain activities. This approach helps students develop skills in risk assessment and making informed decisions in conditions of uncertainty and unpredictability.

Within the discipline of "Life Safety," students study various risk assessment methodologies, including probability analysis, mathematical modeling methods, and expert evaluations. They also learn principles and methods of risk management, including the development of strategies to minimize risks and respond to emergencies.

An important aspect of the concept of acceptable risk is considering the potential consequences and their impact on human health, the environment, and socio-economic development. Training in this discipline aims to cultivate in students a comprehensive approach to risk assessment and management, enabling them to successfully apply the knowledge and skills acquired in their professional activities and daily lives.

Below is an analysis of topics within the discipline of Life Safety where the interactive case method should be applied for better understanding by students of the analysis and essence of production situations.

Table 2

Analysis of the content of the academic discipline Life Safety concerning topics related to acceptable risk.

<i>№</i>	<i>Module</i>	<i>Themes related to acceptable risk</i>
1	Introduction. Ergonomics of the work environment. Occupational health and safety.	<ol style="list-style-type: none"> 1. Development of stress 2. Workplace requirements
2	Types, systems, and characteristics of lighting.	<ol style="list-style-type: none"> 1. Influence of lighting on productivity 2. Consequences of poor lighting in the workplace
3	The impact of noise and vibration on the human body.	<ol style="list-style-type: none"> 1. Consequences of noise and vibration exposure on humans 2. Protective measures against harmful effects of noise and vibration
4	The impact of non-ionizing electromagnetic fields on the human body. Ionizing radiation and ensuring radiation safety. Safety techniques when working with personal computers.	<ol style="list-style-type: none"> 1. The impact of electromagnetic fields on humans 2. Protection against electromagnetic radiation 3. Effects of industrial frequency electrical fields on humans 4. Protective measures against industrial frequency electrical fields 5. Influence of electrostatic fields on humans 6. Means of protection against electrostatic fields 7. Effects of lasers on the human body 8. Protection against lasers 9. Consequences of radiation exposure on humans 10. Measures and means of protection against radiation
5	Electrical safety.	<ol style="list-style-type: none"> 1. Effects of electric current on the human body 2. Factors influencing the severity of electrical injuries 3. Main causes of electric shock to humans 4. Classification of premises based on the degree of danger of electric shock to humans 5. Means of protection against electric shock 6. Personal protective equipment against electric current

6	Providing first aid.	<ol style="list-style-type: none"> 1. First aid for electric shock victims 2. First aid for bruises and strains 3. First aid for dislocations and fractures 4. First aid for wounds, abrasions, and bleeding 5. First aid for fainting, heatstroke, and sunstroke 6. First aid for frostbite 7. First aid for burns 8. First aid for poisonings 9. First aid for animal bites 10. First aid for stroke, epileptic seizure, and hysterical seizure 11. First aid for allergies 12. First aid for drowning
7	Legal and organizational fundamentals of life safety. Industrial sanitation.	<ol style="list-style-type: none"> 1. On-the-job training 2. Types of responsibility for violating life safety rules 3. Recording and investigation of accidents in the workplace 4. Labor Code of the Republic of Uzbekistan
8	Fire safety and fire prevention. Fire suppression systems.	<ol style="list-style-type: none"> 1. Primary causes of fire 2. Fire alarm systems 3. Fire extinguishing equipment
9	Planning activities to ensure life safety in emergency situations	<ol style="list-style-type: none"> 1. Classification of emergency situations and stages of emergency situations 2. Measures for protection against earthquakes 3. Measures for protection against floods 4. Measures for protection against hurricanes and tornadoes 5. Measures for protection against mudflows, snow avalanches, and landslides 6. Measures for protection against forest fires
10	Negative impact of the industrial microclimate. Types and systems of ventilation.	<ol style="list-style-type: none"> 1. Optimal microclimate parameters 2. Comfortable microclimate conditions in the workplace 3. Ventilation in the workplace

To effectively address the aforementioned issues, it is important to employ practice-oriented teaching methods based on modern information and communication technologies and active learning approaches. Special attention should be given to the case method, which has been recognized by scholars as an effective tool for developing skills in assessing acceptable risk.

Practice-oriented teaching methods are widely used in modern higher education worldwide. Their characteristic feature is that they enable students to apply theoretical knowledge in practice. The case method is one such practice-oriented approach.

A case is a description of a specific practical situation that contains enough information for students to understand and discuss it under the guidance of the instructor. The essence of the case method is for students to actively engage in discussing the situation and finding possible solutions to the problem it presents, whether explicit or implicit.

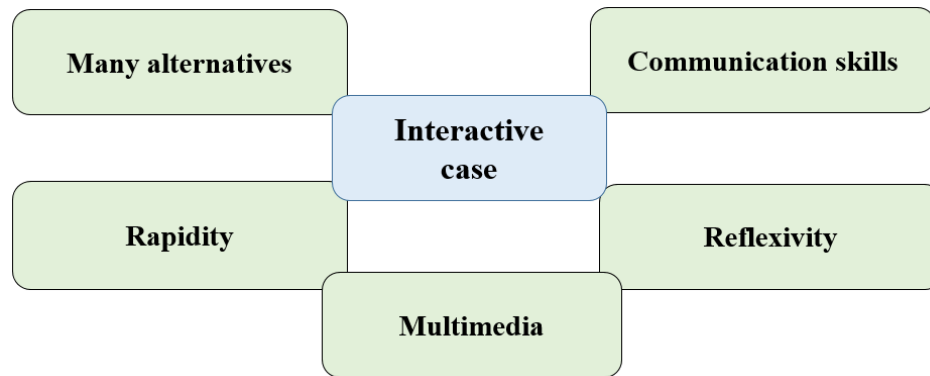


Fig. 1 Interactive Case Method

The use of the case method not only facilitates the practical application of knowledge but also fosters the development of analytical and problem-oriented skills among students. They learn to analyze situations, make informed decisions, and effectively manage risks.

Thus, integrating the case method into the educational process will enable students not only to better understand the concept of acceptable risk but also to develop the necessary skills for successfully applying this concept in various spheres of their activities.

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