EUROPEAN JOURNAL OF LIFE SAFETY AND STABILITY (EJLSS)
ISSN2660-9630
www.ejlss.indexedresearch.org Volume 24, December-2022 ||

Digitalization of Instructions on Labor Protection and Safety Techniques

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Abstract: *The article describes the digital economy and its advantages, the necessity and importance of the application of digital technologies in the field of labor protection, as well as the advantages. Brief information about the digitization model of training and testing of employees' knowledge of labor protection and safety techniques developed by the authors and its content is given.*

Keywords: *digital economy, digitization, labor protection, safety technique, instruction, model, module, digital platform*

Date of Submission: 11-11-2022 ***Date of Acceptance: 17-12-2022***

INTRODUCTION

The transition to the digital economy is the need of the hour and the priority direction of Uzbekistan's development in the coming years. The emergence of new generation digital technologies - artificial intelligence, robotics, the Internet, wireless communication technologies, etc. requires changing the activity models in the production, business and social spheres. Effective use of new digital technologies determines the international competitiveness of both the country as individual companies, forming the infrastructure and legal environment. Currently, in order to improve the quality of services provided in Uzbekistan and make people's lives easier, digital technologies and innovative solutions were been actively introduced and used in various sectors of the economy and society. Digital technologies used in government, banking, industry, medicine and security. The future of our country related to the widespread introduction and use of digital technologies.

Digitization of labor protection in Uzbekistan, like other areas, is considered one of the most important and urgent issues. Because one of the most important tasks of the state and society is to ensure the rights of citizens to healthy and safe work. The experience of many developed countries shows that the development of a culture of labor protection is beneficial for both employees,

employers and the state. Failure to comply with labor protection rules reduces labor productivity and the quality of manufactured goods.

Digitization in the field of labor protection usually means smart helmets, tools for identifying hazards through artificial intelligence. VR educational technologies, as well as in the field of labor protection, simplifying work with documents using electronic document circulation and digital signature, increasing the level of labor protection culture in the workplace, employees plays an important role in protecting their rights and ensuring the safety of high-risk jobs. Digitization of labor protection reduces material costs, saves time, creates an electronic database, expands the possibilities of their transfer, processing. Storage, issues of issuing instructions on labor protection, testing the knowledge of workers will be transferred to the online format, the signing of documents with past dates will be stopped, corruption are prevented, the protection of workers' rights is strengthened and transparency in reports is ensured [1].

Research methods

During the research, methods such as the analysis of scientific and teaching-methodical literature, pedagogical observation, comparative analysis, generalization, programming and digitalization models were used.

Research results and discussions.

According to experts, one of the main directions of digital transformation in labor protection is training of employees and testing of their knowledge. Because this process is one of the most important and time-consuming processes in the field of labor protection. Digitization of these processes can significantly improve the existing training and certification management system in the organization. The main thing is that the degree of digitalization should be optimal in terms of the actual needs of the enterprise, the complexity of the implementation and the results to be obtained [2, 3].

Based on the above requirements, the authors developed a digitalization model for training in labor protection and safety techniques and testing the knowledge of workers in enterprises and organizations. The model is based on standard forms of training and certification process common to all enterprises. This includes the employee's full employment at the company from the moment of employment.

The following requirements were taken into account when developing a digital model of labor protection training and knowledge testing in enterprises:

• permanence and stability of the model, that is, the model includes the entire period of the employee's work, except for the process of entering the job;

• the requirements of the Regulation on labor protection training and testing of knowledge of employees working in a specific model enterprise are taken into account;

• the main goal of training on labor protection defined in the model that clear sequence of actions that ensure the employee's safety;

• it is taken into account that the model is functionally and methodologically unified, that is, it should have a single educational and methodological base based on local regulatory documents and specific work practices, including their negative consequences.

The digital model has the following main features:

• a single software platform flexible to internal corporate requirements and legal and regulatory requirements;

• effective forms of information presentation - primarily audio-visual, video clips, electronic resources and electronic tests;

• the possibility of continuous monitoring of the level of knowledge and evaluation of the level of mastering of the material and the level of knowledge acquired by the employee, issuing a certificate or certificate in the appropriate manner.

A digital model of a corporate system for training and testing knowledge on labor protection at various stages of an employee's professional activity

Stages of professional activity		**Business processes**	**The decision of the permanent commission**
Recruitment process		Introduction guide	
		Primary instruction in the workplace	
		Training on methods and methods of labor protection and safe conduct of work	
		Training on methods of first aid in case of injury to a doctor	
Work process during professional activity	**Repetitive processes**	Redirection in the workplace (planned)	
		Periodic testing of knowledge	
		Unplanned instruction (when introducing new technology, new techniques, when there is a break in the employee's work for more than 60 days and after accidents)	
	Additional one-time works and works on a serial permit	Targeted instruction	
	Transfer to another job or transfer to another department for this type of work	Guidance in the workplace	
		Training on methods and methods of labor protection and safe conduct of work	

In accordance with the current legal documents, the employer is responsible for providing instructions to employees about safety equipment, production sanitation, fire safety and other rules of labor protection, as well as constantly checking that employees comply with all requirements of labor protection.

Organization of instruction, training and knowledge testing of employees should be carried out in accordance with the Model Regulation "On Organization of Labor Protection Studies and Knowledge Testing" (August 14, 1996, list number 272).

It is prohibited to employ employees who have not passed training, guidance and knowledge verification in accordance with the established procedure for labor protection.

The general leadership and responsibility for the organization and implementation of training of employees in safe work methods assigned to the head of the enterprise. The types of employee training divides into two types: induction and on-the-job training. The instruction in the workplace, in turn, divided into primary, periodic and extraordinary instructions.

1. The procedure for transferring employees from the entrance instruction. Employees who have joined the enterprise, those who have gone on a business trip to work for this enterprise from other organizations, and students who have come to do internships, go through the entry guide. An employee of the labor protection service or another employee entrusted with this task will carry out the introduction of employees. Currently, the introduction conducted in a labor protection room equipped with relevant regulatory documents and demonstration tools.

When this instruction is organized with digital technologies, it is recommended to use interactive presentations, video materials, interactive texts and other types of electronic learning resources [4]. Their distinctive feature depends on the employee's perception, ability to use auditory and visual channels. However, developing, updating, and introducing these digital materials into a regular platform requires significant time and financial resources. Employees who have passed the login instructions on the platform are recorded in a special online journal.

The entry guidance program is required to include the following:

1. General information about the enterprise.

2. Labor protection: working time and rest time, labor protection of young people and women, rules of internal labor procedure, next actions of the employee in case of accidents in production.

3. Safety techniques:

- dangerous and harmful production factors and their protection, the main causes of accidents and occupational diseases at the enterprise;
- compliance of workplace equipment (techniques) and production process with the requirements of the occupational safety standards system (OSHS),
- blocking, protective and warning equipment, safety signs and colors,
- the effect of electric current on the human body, measures to prevent injury from electric current,
- security requirements for the enterprise and workplace.

4. Production sanitation;

- The main sanitary and hygienic factors in production,
- Measures to improve working conditions (technical and organizational, sanitary-hygiene and treatment), ventilation (ventilation) equipment and light standards.

5. Free provision of personal protective equipment to employees;

- procedures for free provision of special clothing, shoes and other personal protective equipment, detergents and disinfectants, milk or other food products equivalent to it, dietary food in accordance with established standards for work performed in enterprises with harmful and dangerous conditions or pollution-related conditions,

- compliance of this protective equipment with the requirements of the occupational safety standards system (OSHS), their storage, repair, cleaning, washing and proper use.

6. Fire safety requirements for the enterprise.

7. First aid.

- providing first aid to employees in case of bodily injury, acid and alkali burns, gas poisoning, electric shock, and other cases.

8. An entry instruction is drawn up, which includes issues such as the responsibility of the employee in case of violation of the requirements of the technical safety certificate.

The procedure for training employees in the workplace:

- all employees are required to go through the instructions at the workplace in addition to the entrance instructions;
- the purpose of training at the workplace is to train each employee in safe and correct work methods;
- during training at the workplace, the employee is introduced to the structure of mechanisms, workbenches and equipment, dangerous and safe areas, as well as the process of preparing the workplace for work;
- the brigadier (department) directly supervising the employee is responsible for conducting the training at the workplace;
- the development of guidelines and the provision of workers and workplaces with the guidelines are assigned to the labor protection service or one of its acting leaders;
- employees who have undergone training are recorded in the log of training at the workplace and formalized with appropriate signatures (the procedure for keeping the log is given in Appendix 2);
- regardless of seniority and qualifications, employees must undergo regular training every 6 months;
- when there are changes in production technologies, when machines are changed and there are changes in working conditions as a result of other situations, when accidents occur in production, when changes are made to the instructions for safe work and in other cases, extraordinary instructions are passed;
- extraordinary training is also recorded in the journal with the same reasons as for training at the workplace.

It is recommended to use video tutorials simulating real situations, interactive simulators and electronic simulators for risk assessment and determining the correct actions in the digitization of the training of workers on the methods of safe work performance. Also, the use of the most modern teaching technologies [5,6], including the method of projects aimed at developing students' independent and creative thinking skills, has a good effect [7].

There are a number of challenges facing the digitization of instruction today, including:

- the problem of switching signatures to electronic signatures. Although this issue is a somewhat complicated process, it will put an end to illegal activities such as forged signatures and documenting in paper version with subsequent dates. Instead of an electronic signature, the fingerprint of the worker and the guide, as well as the picture recorded on the video camera and the date and time of the guide can be entered. This ensures complete transparency.

- online transfer of instructions and their confirmation with electronic signatures requires special amendments to legal and regulatory documents;

- the problem of recognition of passed online instructions by relevant state control bodies;

- to include the materials related to the instruction on the type of jobs and professions and the transition graphics of the instructions to platform and update it.

Occupational safety training and training courses are also conducted directly on this platform. For this, the training program is divided into the following modules:

Module 1 - legal and normative bases of labor protection;

Module 2 - production sanitation and personal hygiene;

Module 3 - security techniques;

Module 4 - fire safety

Module 5 - first aid before a doctor.

Electronic resources for theoretical and practical exercises and test questions to assess mastery are included for each module. The online training course is completed with a final inspection and an electronic certificate will be provided to the graduates.

Summary

Digitization of labor protection works is of great importance in the information society and production environment. Video analysis, transfer of training and instructions to a digital platform, provision of electronic training materials plays an important role in ensuring safety in professional activities. Digitization of instructions and training of workers on labor protection and safety techniques in enterprises and organizations will create opportunities for full digitization of labor protection service in the enterprise, electronic registration and work permit in the future, and will be the basis for creating an electronic workplace. Digitization is an effective and modern solution to the problems of ensuring the safety of workers' vital activities and minimizing occupational risks in industrial enterprises. The introduction of digitalization significantly reduces the working time of a specialist, provides an opportunity to introduce and create new management approaches to labor protection, and leads to an increase in the safety culture in the enterprise.

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