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## **FORMATION OF PROFESSIONAL COMPETENCIES OF SPECIALISTS IN SAFE LABOUR AND PROTECTION IN EMERGENCY SITUATIONS**

*Abstract.* High rates of technogenic development of industrial production are the cause of emergency situations. The development of professional competences is one of the effective measures to prevent accidents and reduce industrial injuries. The authors studied the educational programmes of 25 higher educational institutions of Kazakhstan that train specialists in the educational programme "6B11203 - Life Safety and Environmental Protection". It was found that in higher education institutions (70 %) emphasis is placed on professional skills. Among soft skills in educational programmes, managerial, general cultural and fundamental skills are highlighted. In educational programmes hard skills are distinguished by diversity and different orientation. Much attention is paid to the competence of "emergency management", the ability to maintain documentation, knowledge of regulatory legal acts, development of documents and projects, etc.

*Key words:* emergencies, life safety, competences, educational programme, occupational health and safety, environmental protection.

*Introduction.* The problem of natural and man-made disasters is topical all over the world, and it affects practically all branches of industrial production. Due to the peculiarities of geographical location and diverse natural and climatic conditions in the Republic of Kazakhstan there are a variety of emergencies: from earthquakes to snow storms; from oil spills to transport accidents, etc. According to the Ministry of Emergency Situations of the Republic of Kazakhstan, the population alone receives more than 6 million calls about emergency situations (hereinafter, ES) [1]. Every year the number of registered emergencies increases, so in 2022 in the country recorded 13355 cases, which is 2.4% more than in the previous year 2021. Of these, almost 89% are emergencies of man-made nature.

The accident rate in the mining and metallurgical, petrochemical, oil and gas extraction and chemical industries is unacceptably high. Thus, in 2022, 28 accidents occurred at the enterprises of Kazakhstan, as a result of which 15 people died and 32 were injured. The growth of accidents is 40 percent higher than in the previous year 2021. Activity of 733 facilities was suspended due to violations of industrial safety requirements [2]. One of the main causes of industrial accidents are violations of industrial safety requirements. Workers and employees have a low level of safety knowledge, do not possess competences in forecasting, prevention, quick and competent response to a dangerous situation. In this regard, the formation of competences and training of future specialists in life safety (hereinafter, LS) is relevant [3].

In the studies conducted by Russian scientists, it was revealed that in order to perform their functions, labour protection specialists should be well-versed in legislative and regulatory legal acts, requirements for safe conduct of work and use of equipment, be

able to conduct accident investigation, investigate working conditions at the workplace, etc. According to the surveyed employers, the development of professional competences ranks second among the effective measures to prevent occupational injuries and occupational diseases [4]. To improve occupational safety management, future specialists along with professional competences should develop socio-communicative, economic-mathematical, methodological and valeological competences [5]. Improving the competence of a specialist in the field of labour protection positively affects the economic activity of the enterprise.

*Research methods.* Analysis of literary sources, normative and legal documentation; study of educational programmes of higher education institutions of Kazakhstan on the specialty "Life safety and environmental protection"; methods of quantitative processing of research results.

*Research results.* In Kazakhstan, training of specialists on the educational programme "6B11203 - Life Safety and Environmental Protection" is carried out by about 23 universities, including two higher education institutions, the educational programme has a different name "Industrial, Environmental and Fire Safety" and "Life Safety in the Technosphere". Educational programmes in higher education institutions are developed on the basis of the State Educational Standard and professional standard taking into account the competence approach [6-7]. According to the approved classifier the direction of training of personnel with higher and postgraduate education 6B112 - Hygiene and labour protection, classification of the field of education 6B11 - Services [8].

Learning outcomes are the expected achievements of students, which are formed taking into account the opinion of employers and students. Based on the analysis of learning outcomes in the above-mentioned educational programmes, it was revealed that the authors have different attitudes to the formation of competencies of future specialists, giving preference to "hard" - hard skills or "soft" - soft skills. Out of the total list, only five universities (22%) are more oriented towards the development of non-professional, universal skills in future specialists. In two universities (9%) the number of "soft" and "hard" competences in educational programmes is the same. The remaining universities (70%) focus on professional skills (Figure 1).

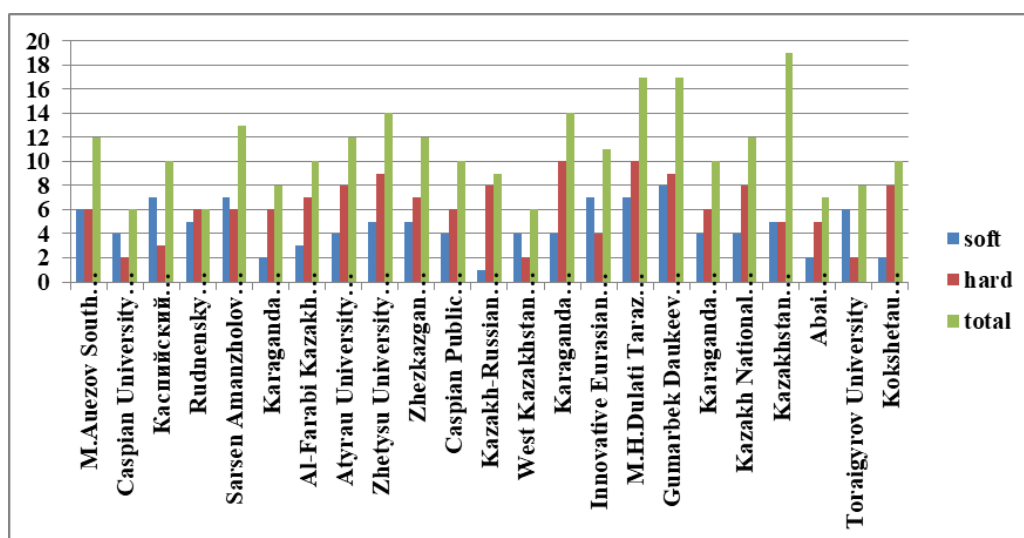


Figure 1 - Analysing the content of "soft" - soft skills and "hard" - hard skills competences in educational programmes

Among soft skills in educational programmes, managerial, general cultural and fundamental skills are highlighted; they are found in 14 educational programmes. Language, digital and entrepreneurial skills are represented in 10 educational programmes. Along with them, the development of social, personal and research skills is highlighted (Figure 2). Much attention is paid to multilingual and multicultural communication, culture of oral and written speech, these competences help specialists to solve problems of interpersonal and professional cooperation and interaction.

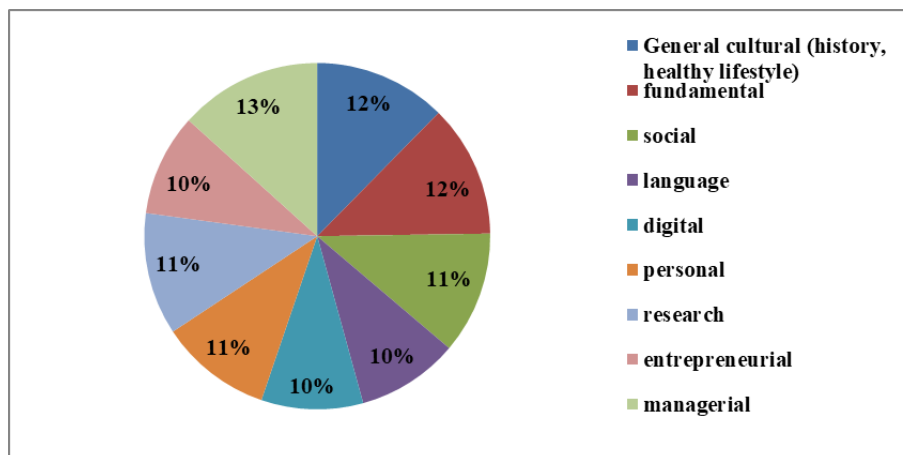


Figure 2 - Content analysis of "soft" - soft skills competences in educational programmes "6B11203 - Life safety and environmental protection" of higher education institutions of Kazakhstan

In educational programmes hard skills are distinguished by diversity and different focus. Much attention is paid to the ability to maintain documentation, knowledge of domestic and international standards, regulatory and legal legislative acts, development of documents and projects in the field of life safety and environmental protection (Figure 3).

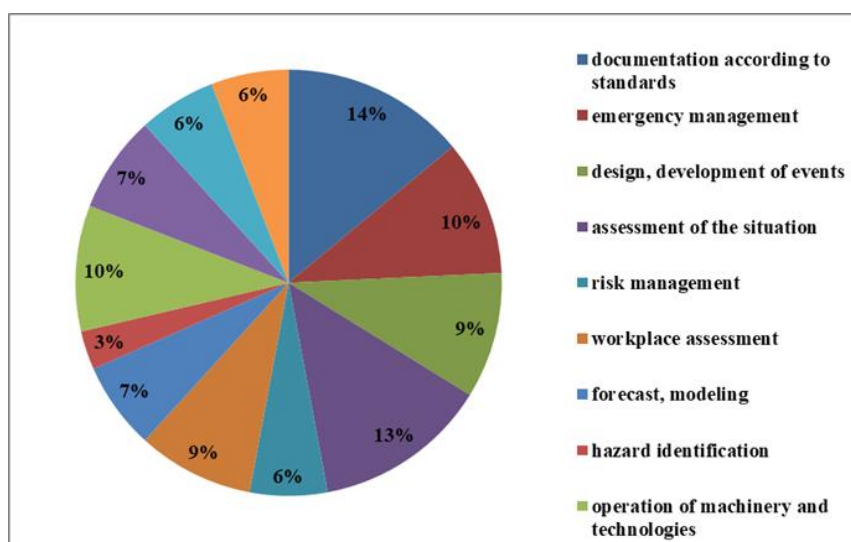


Figure 3 - Analysis of the content of hard" - hard skills competences in educational programmes "6B11203 - Life Safety and Environmental Protection" of higher education institutions of Kazakhstan

The competence "emergency management" is the second most important in the presented educational programs. The future specialist should analyze industrial safety issues, including in emergency situations, apply new types and methods of emergency response, act competently in any emergency situations, organize and conduct a search for victims in rubble, destroyed buildings and structures in conditions of natural and man-made emergency manifestations and formations of civil defense forces when performing emergency response tasks, apply innovative technologies in emergency management, to organize work on the organization of measures to protect the environment and safety in emergency situations by means of technological systems, networks and equipment, to develop new techniques and technologies to ensure the safety of life, protection in emergency situations using international and national standards and standards of enterprises.

Specialists responsible for ensuring occupational health and safety at enterprises must be able to work in emergency conditions, design, develop measures, assess the situation and workplaces, know and comply with the requirements of the operation of equipment and technologies, be able to effectively manage risks, forecast and simulate situations.

Professional competences of future specialists in occupational safety and protection in emergency situations are of great importance for sustainable social and economic development of the country. The most important competences of future specialists are: possession of professional safety culture, ability to recognise and assess risks, prevention of dangerous situations threatening human health and life, orientation in normative-legal acts in the field of ensuring safety, knowledge of the basics of safety in emergency situations, ability to find a quick solution and master the situation. The main task of higher school is to train highly qualified specialists. The studied educational programmes show how diverse competences a labour protection specialist should possess in the conditions of active technogenic activity in order to work effectively in the field of professional safety.

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## ТӨТЕНШЕ ЖАҒДАЙЛАРДА ҚАУІПСІЗ ЕҢБЕК ЖӘНЕ ҚОРҒАУ ЖӨНІНДЕГІ МАМАНДАРДЫҢ КӘСІБИ ҚҰЗЫРЕТТЕРІН ҚАЛЫПТАСТЫРУ

*Аңдатпа.* Өнеркәсіптік өндірістің техногендік дамуының жоғары қарқыны төтенше жағдайлардың себебі болып табылады. Кәсіби құзыреттілікті дамыту авариялардың алдын алу және өндірістік жарақаттарды азайту жөніндегі тиімді шаралардың бірі болып табылады. Авторлар "6в11203 - Өмір қауіпсіздігі және қоршаған ортаны қорғау" білім беру бағдарламасы бойынша мамандар даярлауды жүзеге асыратын Қазақстанның 25 жоғары оқу орнының білім беру бағдарламаларын зерделеді. Жоғары оқу орындарында (70 %) кәсіби дағдыларға баса назар аударылатыны анықталды. Soft skills-тен білім беру бағдарламалары басқарушылық, жалпы мәдени және іргелі болып табылады. Білім беру бағдарламаларында hard skills әр түрлі және әр түрлі бағытта ерекшеленеді. "Төтенше жағдайды басқару" құзыретіне, құжаттаманы жүргізу қабілетіне, нормативтік-құқықтық заңнамалық актілерді білуге, құжаттар мен жобаларды әзірлеуге және т. б. үлкен көңіл бөлінеді.

*Түйінді сөздер:* төтенше жағдайлар, тіршілік қауіпсіздігі, құзыреттер, білім беру бағдарламасы, Еңбекті қорғау, қоршаған ортаны қорғау.

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## ФОРМИРОВАНИЕ ПРОФЕССИОНАЛЬНЫХ КОМПЕТЕНЦИЙ СПЕЦИАЛИСТОВ ПО БЕЗОПАСНОМУ ТРУДУ И ЗАЩИТЕ В ЧРЕЗВЫЧАЙНЫХ СИТУАЦИЯХ

*Аннотация.* Высокие темпы техногенного развития промышленного производства являются причиной чрезвычайных ситуаций. Развитие профессиональных компетенций является одной из эффективных мер по предупреждению аварий и снижению производственных травм. Авторами были изучены образовательные программы 25 вузов Казахстана осуществляющих подготовку специалистов по образовательной программе

«БВ11203 - Безопасность жизни и защита окружающей среды». Выявлено, что в вузах (70%) упор делается на профессиональные навыки. Из soft skills в образовательных программах выделены управленческие, общекультурные и фундаментальные. В образовательных программах hard skills отличаются разнообразием и различной направленностью. Большое внимание уделено компетенции «управление чрезвычайной ситуацией», умению вести документацию, знанию нормативно-правовых законодательных актов, разработке документов и проектов и др.

*Ключевые слова:* чрезвычайные ситуации, безопасность жизнедеятельности, компетенции, образовательная программа, охрана труда, защита окружающей среды.

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