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TRAINING THE POPULATION OF THE REPUBLIC OF KAZAKHSTAN IN EMERGENCY SITUATIONS USING A MOBILE APPLICATION

Abstract. The article examines the importance of using a mobile application for training the population of the Republic of Kazakhstan in protective measures in the event of natural and man-made emergencies. The author emphasizes the advantages of mobile applications against the backdrop of rapid digital development and the growing number of mobile device users. The article highlights the strengths and weaknesses of population training through mobile devices. As an example, the author presents the developed mobile application «Civil Defense of Kazakhstan». The application contains educational materials, tests, and video instructions on actions in various emergency situations. The article concludes that the active integration of mobile technologies into the civil protection system is essential for enhancing public awareness and preparedness for emergencies.

Keywords: civil protection, public training, mobile application, mobile device, emergency situation.

Every day, emergency situations occur around the world. The extensive development of infrastructure in developed countries and the increasing number of industrial enterprises lead to a rise in the number of man-made emergencies. The main causes include the insufficient level of training among personnel at hazardous industrial facilities and the deterioration of equipment, which may result in large-scale emergency situations. Thus, the root cause of such disasters is human activity. Examples of major accidents include the Bhopal disaster (India, where 4,035 people died) and the Seveso incident in Italy (where more than 1,000 people were affected) [1].

One should not forget the destructive power of natural emergency situations. As a result of the devastating earthquake in Türkiye, more than 50,090 people died, and in Syria, 8,476 people lost their lives, with tens of thousands more injured [2].

The infectious disease «COVID-19» became a real challenge for humanity. The coronavirus pandemic introduced significant adjustments to the education systems of many countries. The offline education in universities, colleges and schools changed to a distance-learning format [3].

One of the main tasks of civil protection is to prepare the population for actions in emergency situations and to teach self-protection skills [4]. To achieve this goal, annual training programs for managers, specialized personnel, and various population groups are developed in the Republic of Kazakhstan [5]. Public training in Kazakhstan is organized according to specific categories and groups. For non-working population, a format of independent learning is provided, which includes listening to radio broadcasts, watching TV programs, studying online information resources, as well as reading magazines, brochures, and leaflets. Knowledge consolidation takes place during drills and training exercises [6, 7].

However, in the modern world the popularity of printed magazines and newspapers is steadily declining—most information in developed countries is obtained from the internet or social networks using mobile devices.

Today it is difficult to imagine everyday life without internet and smartphones. Millions of people use smartphones and tablets every day to solve various tasks. The main difference between a mobile device and a desktop computer lies in convenience and portability: the keypad has been replaced by a touch screen, and high-resolution cameras are built in. As a result, smartphones have become an integral part of modern life. The rapid growth of technology and the increasing number of mobile device users have also influenced the educational process.

Smartphones make it easy to organize video conferences, record audio and video materials, watch video courses, and listen to audiobooks. To simplify these processes, specialized mobile applications have been created, becoming an important tool in education. They provide flexibility, accessibility, and a variety of learning methods. This article explores how mobile applications affect learning quality and what benefits they offer both learners and educational institutions [8, 9].

One of the main advantages of mobile applications is their accessibility. With a smartphone, a person can study necessary materials anywhere and at any convenient time. This is especially important for individuals who cannot regularly attend educational institutions or have limited time.

Mobile applications make it possible to take tests, listen to lectures, and complete exercises in a flexible mode, significantly simplifying the learning process. For example, language-learning services allow users to practice even for just a few minutes a day, which is ideal for those with busy schedules. Additionally, applications provide broad content options, including audiobooks, articles, video tutorials, and online courses. Unlike traditional educational publications, applications are regularly updated with the latest materials. Many of them include multimedia elements, which help to visualize complex concepts. For example, chemistry or physics applications may contain 3D models demonstrating various processes, improving the clarity of learning.

With built-in algorithms, mobile applications can adapt the learning process to the user's level and abilities. By analyzing performance, the system selects appropriate tasks and content complexity. Learning begins with simple tasks and gradually transitions to more advanced ones as the user progresses. When errors occur, the application can provide explanations or recommendations, facilitating problem resolution. This personalized approach makes learning more effective.

Mobile applications increasingly use interactive learning formats: video lessons, quizzes, gamification elements, and simulators. Such methods make the process more engaging and encourage active participation. Gamified content—awarding points or achievements for completing tasks—supports healthy competition and enhances motivation.

An important advantage of mobile applications is the ability to instantly receive feedback on completed tasks, which accelerates the learning process. Learners immediately see test results and receive suggestions on how to improve. Some applications also allow interaction with mentors or other students, contributing to motivation and mutual support, especially when distance learning limits direct teacher contact.

In many cases, mobile learning is cost-effective and convenient compared to classical methods. Many services offer free access to basic educational materials, while paid subscriptions unlock advanced features. Users also do not need to commute to educational centers, which is especially beneficial for those living far from urban areas. Such applications allow people to continuously improve their skills-highly relevant today, when knowledge must be constantly updated. For professionals unable to attend traditional courses, mobile applications for professional development help maintain competence and remain in demand.

Like any innovation, the introduction of mobile applications comes with certain disadvantages:

- Low internet speed or lack of connectivity in remote regions.
- Small smartphone screen size complicating work with certain types of content.
- Some users lack modern devices capable of supporting new applications.
- Games and social networks on the device may distract users, lowering concentration.

Nevertheless, mobile applications have significantly transformed the learning sector, expanding opportunities for people of different ages and professions.

In a number of developed countries, mobile applications created by emergency services already operate successfully, helping people act in emergency situations. In Kazakhstan, the Ministry of Emergency Situations developed the “Darmen” application [10]. It promptly informs citizens and entrepreneurs about suspension of classes, road closures, and other hazardous natural phenomena, sending notifications faster than conventional SMS.

To train the population in civil defense, the author developed the mobile application «Civil Defense of Kazakhstan» for the Android platform (Figure 1). It contains educational presentations and guidelines on actions in various emergencies. After completing the materials, the user may take a test to assess the level of knowledge retention. Results are calculated automatically and displayed using a four-point evaluation scale. The interface is designed so that no special skills are required. If desired, users can retake the test to reinforce their knowledge [11].

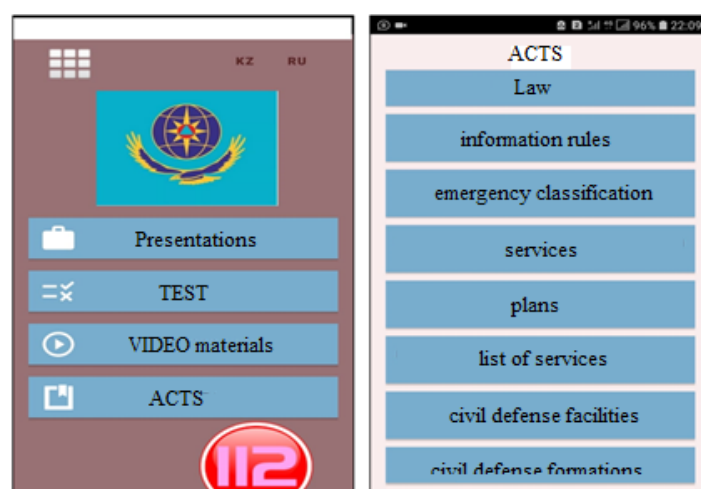


Figure 1 - «Civil Defense of Kazakhstan» mobile application

An important feature of this application is access to educational videos demonstrating step-by-step actions in emergencies. For convenience, the application includes embedded links to videos showing practical techniques -for example, what to do in case of fire, how to administer first aid, or how to stop bleeding. This "better to see once than hear or read a hundred times» format helps users learn the material more effectively and locate the necessary instructions quickly. The application also includes content on preventing carbon monoxide poisoning and household fires during the heating season (Figure 2).

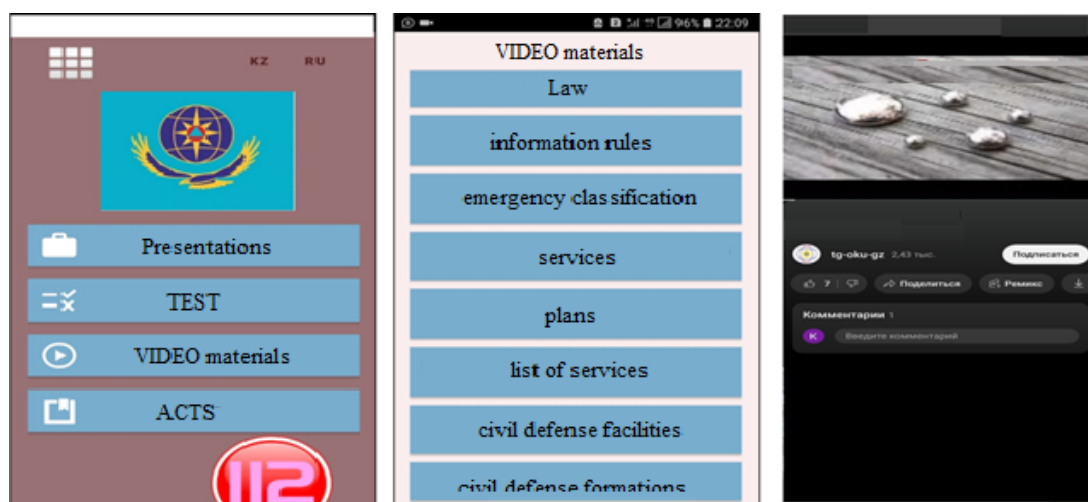


Figure 2 – Video materials

It is evident that mobile applications are becoming an integral part of the educational process. As the demand for fast access to information is growing constantly, it is crucial to develop and introduce mobile services as educational tools for training the population. With a mobile application, users can study theoretical materials and watch instructional videos on emergency situation without leaving home.

Thus, mobile applications already play a significant role in education, improving the effectiveness of civil protection training and providing a modern format for delivering essential knowledge and skills. Despite certain limitations, the development of digital technologies opens new horizons for public education in civil protection.

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ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ ХАЛҚЫН МОБИЛЬДІ ҚОСЫМШАНЫ ПАЙДАЛАНА ОТЫРЫП, ТӨТЕНШЕ ЖАҒДАЙЛАРДАҒЫ ІС-ҚИМЫЛДАРҒА ОҚЫТУ

Аңдатпа. Мақалада табиғи және техногендік сипаттағы төтенше жағдайлар туындаған кезде Қазақстан Республикасының халқын қорғау тәсілдеріне оқыту мақсатында мобильдік қосымшаны пайдаланудың маңыздылығы қарастырылады. Автор цифрлық технологиялардың қарқынды дамуы мен мобильді құрылғыларды пайдаланушылар санының өсуі аясында мобильді қосымшалардың артықшылықтарын атап көрсетеді. Мақалада мобильді құрылғыларды қолдана отырып, халықты оқыту процесінің оң және теріс жақтары ашылады. Мысал ретінде автор әзірлеген «Қазақстанның Азаматтық қорғанысы» мобильді қосымшасы сипатталған. Әзірленген қосымшада әртүрлі төтенше жағдайлардағы іс-әрекеттерге арналған Оқу материалдары, тесттер мен бейнероликтер бар. Халықтың хабардар болу деңгейін және төтенше жағдайларда іс-қимылға дайындығын арттыру үшін азаматтық қорғау саласына мобильді технологияларды белсенді енгізу қажеттілігі туралы қорытынды жасалады.

Түйінді сөздер: азаматтық қорғау, халықты оқыту, мобильді қосымша, мобильді құрылғы, төтенше жағдай.

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ОБУЧЕНИЕ НАСЕЛЕНИЯ РЕСПУБЛИКИ КАЗАХСТАН ДЕЙСТВИЯМ В ЧРЕЗВЫЧАЙНЫХ СИТУАЦИЯХ С ИСПОЛЬЗОВАНИЕМ МОБИЛЬНОГО ПРИЛОЖЕНИЯ

Аннотация. В статье рассматривается значимость использования мобильного приложения в целях обучения населения Республики Казахстан способам защиты при возникновении чрезвычайных ситуаций природного и техногенного характера. Автор подчёркивает преимущества мобильных приложений на фоне стремительного развития цифровых технологий и роста числа пользователей мобильных устройств. В статье раскрыты положительные и отрицательные стороны процесса обучения населения с использованием мобильных устройств. В качестве примера описано разработанное автором мобильное приложение «Гражданская оборона Казахстана». Разработанное приложение содержит обучающие материалы, тесты и видеоролики по действиям в различных чрезвычайных ситуациях. Делается вывод о необходимости активного внедрения мобильных технологий в сферу гражданской защиты для повышения уровня информированности и готовности населения к действиям в чрезвычайных ситуациях.

Ключевые слова: гражданская защита, обучение населения, мобильное приложение, мобильное устройство, чрезвычайная ситуация.

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