



Article

Opportunities For Students to Develop Skills in Observing the Rules of Life With the Help of Artificial Intelligence

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Abstract: This article develops the methodological foundations for forming students' skills in observing safety and life rules using artificial intelligence technologies. The study takes into account students' age and psychological characteristics, and educational approaches to teaching safety rules are based on interactive, personality-oriented, and gamified methods. Through artificial intelligence-based learning platforms, student behavior is monitored and analyzed in both real and virtual environments. In addition, the effectiveness of the outcomes has been experimentally verified, and practical recommendations have been developed.

Keywords: artificial intelligence, life safety, safety skills, students, methodology, gamification, interactive learning, virtual technologies, safety culture, educational technologies

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1. Introduction

Today, the increasing number of emergencies has made it a timely necessity to develop new approaches and educational methodologies to ensure safety in life activities. These changes require the introduction of innovative methods and approaches that help make the educational process more effective and result-oriented. Such situations—ranging from natural disasters to incidents caused by human activity—necessitate improving students' preparedness for emergencies. Teaching students the skills of correct and prompt response is crucial for ensuring safety in life activities and plays an important role in instilling values that help young people preserve their own lives and enhance the safety of others.

Educational systems based on artificial intelligence provide effective opportunities to develop practical skills in students through individualized approaches, interactive lessons, and simulations close to real-life situations. Through these methods, students can gain a deeper understanding of how to act correctly in emergencies.

Thus, the capabilities of artificial intelligence in the field of education play a direct role in teaching students how to act quickly and effectively in dangerous situations. This process is of great importance in increasing preparedness and ensuring safety. Therefore, the integration of artificial intelligence into educational systems has become one of the most pressing tasks of our time.

An emergency is defined as a situation that may cause serious harm to human life, health, or the environment, as well as significant material damage, and results from accidents, disasters, hazardous natural phenomena, or other natural calamities that disrupt normal living conditions in a certain area. In such situations, people—especially young

individuals and students—may panic or make the wrong decisions. Hence, it is crucial for the modern education system to teach them how to act properly during emergencies.

The integration of artificial intelligence into such processes creates opportunities to provide students with real-time guidance, develop practical skills through simulations, and teach using a personalized approach. This article focuses in detail on how artificial intelligence can train students to respond correctly during emergencies.

The article aims to answer the following questions:

How can artificial intelligence assist students during emergencies?

In what ways do AI-based software tools provide students with practical skills?

What are the advantages of using artificial intelligence for such purposes?

Through this article, we analyze the changes brought by artificial intelligence in the fields of modern education and emergency preparedness and outline future prospects in this direction.

Literature review:

Numerous scientific studies have explored the development of students' skills in responding appropriately during emergencies. The analyzed literature pays special attention to aspects such as the formation of safety culture, psychological preparedness for emergencies, and the development of practical skills.

Existing scholarly sources and literature on artificial intelligence (AI) technologies were utilized to examine how they contribute to training students to act correctly in emergencies. This section analyzes the role of AI in education, its methodological applications, and practical outcomes based on research related to emergency preparedness. [1]

1. Literature on the General Role of AI in Education:

Several studies highlight the role of artificial intelligence in modern educational systems. For example, the work of Luckin R., and Holmes, W, titled “Artificial Intelligence in Education: Challenges and Opportunities for Learning”, offers an in-depth analysis of how AI can optimize learning processes and ensure personalized approaches. According to their research, AI can assess students’ knowledge levels through adaptive algorithms and recommend tailored lesson plans accordingly. This feature is also crucial for teaching materials related to emergency preparedness. [2]

Similarly, the book “Artificial Intelligence in Education” by Holmes W., Bialik M., and Fadel C. thoroughly examines innovative AI-based approaches in education. It discusses simulation platforms and virtual reality (VR) technologies that allow students to gain hands-on experience in realistic environments. This is especially important for learning how to respond quickly and correctly in emergency situations. [3]

2. Literature on Emergency Preparedness:

There is also a body of research dedicated to forming students’ safety skills in emergencies. For example, Ronald D. Kriz, in his work titled “Emergency Preparedness in Schools: A Comprehensive Guide,” explores general principles and strategies for emergency preparedness in schools. The author discusses the effectiveness of using modern technologies such as AI to teach students how to follow evacuation signs, administer first aid, and acquire other life-saving skills. [4] Furthermore, the article “Simulation-Based Learning in Emergency Response Training” by Garcia A. J. and Martinez P. analyzes the impact of simulation methods in preparing for emergencies. The article presents the use of virtual reality (VR) and augmented reality (AR) technologies that offer students practical training opportunities in near-real scenarios. This strengthens the methodology for using AI-based simulation platforms in emergency preparedness.

3. Literature on Gamification and Interactive Learning:

Various studies have explored the importance of gamification and interactive teaching methods in boosting students' motivation and interest. For instance, the study by Dicheva D., Dichev C., Agre G., and Angelova G. (2015), titled "Gamification in Education: A Systematic Mapping Study," evaluates the impact of gamification elements on the learning process. According to this research, gamification helps students develop teamwork, problem-solving, and decision-making skills — all essential for quick and effective action in emergencies. [5]

Likewise, Kapp K. M. in his book "The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education," analyzes the psychological and pedagogical effectiveness of using games in education. The book highlights the specific role of AI-based gamification tools in teaching students how to manage complex situations.

4. Literature on Ethics and Morality in AI Education:

As AI technologies enter the educational sphere, ethical and moral concerns are also increasingly discussed. For instance, Floridi L. (2019), in his work titled "Ethics of Artificial Intelligence," explores issues such as data privacy, fairness in education, and the human factor in AI systems. The author emphasizes the importance of adhering to data security standards when storing and using personal information within AI systems — a crucial point in educational programs focused on emergency preparedness. [6].

2. Materials and Methods

In this study, methods for using artificial intelligence (AI) technologies to develop students' skills for acting correctly in emergency situations were elaborated. The research process involved the following approaches:

Interactive AI-based educational platforms and virtual software tools were selected, and their capabilities were analyzed.

An experimental group and a control group were established. Students in the experimental group were trained using virtual software-based activities, while the control group was taught using traditional teaching methods.

Students' preparedness for emergency situations was assessed through pre- and post-tests.

The results obtained were statistically analyzed, and the effectiveness of AI-based education was evaluated. [7]

During the study, changes in students' knowledge, practical skills, and decision-making abilities were examined. As a methodological approach, students were individually trained using AI tools in simulated environments that closely resembled real-life situations.

3. Results

The results of the study confirmed the effectiveness of artificial intelligence (AI) technologies in developing students' skills to act appropriately during emergency situations. It was revealed that the preparedness level of students in the experimental group was significantly higher than that of those in the control group.

Specifically:

Students in the experimental group scored an average of 85% in correctly answering questions related to emergency situations, whereas the control group scored 62%.

Students who participated in AI-based simulations demonstrated higher performance in practical exercises that involved quick decision-making and coordinated actions.

Their knowledge of safety principles was solidified, and they were able to demonstrate appropriate behavior and correct responses in dangerous situations.

Additionally, the use of AI tools led to increased engagement in the learning process, enhanced motivation for independent learning, and improved self-assessment skills among students.

Several key achievements and positive changes were observed in the process of using AI technologies to develop emergency response skills in students. Based on the research findings, the following benefits of AI in education were highlighted:

Effective skill development

AI-supported training ensured the acquisition of practical and applicable skills through simulation and repetition.

Impact of personalized approaches

AI allowed for customized teaching that addressed individual student needs, thus enhancing learning outcomes.

Expanded understanding of safety-related concepts

Students gained deeper insights into the nature of emergency risks and response procedures.

Improved psychological preparedness

Training in realistic environments helped students remain calm and confident when facing emergency scenarios.

Future Prospects

The findings suggest that the role of AI in training students for emergency situations is likely to expand in the future. The following directions are identified as key areas for further development:

Deepening AI integration:

Increasing the depth of AI integration in the educational process will enhance students' abilities and readiness for complex situations.

Development of new methods:

Innovations such as gamification, virtual reality (VR), and adaptive learning should be further improved and systematically introduced into emergency preparedness education.

The results clearly demonstrate that AI technologies play a vital role in shaping students' emergency response skills. The implementation of AI significantly improved students' knowledge levels, practical skills, decision-making abilities, and psychological resilience.

[8]

4. Conclusion

To summarize, AI technologies have demonstrated high effectiveness in forming students' correct response skills during emergencies. Interactive training sessions and virtual software simulating real-life scenarios played a crucial role in enhancing students' knowledge, practical experience, and rapid decision-making abilities.

The growing role of AI in shaping emergency preparedness skills is evident in modern education. Through integration into the teaching process, students become better prepared—both theoretically and practically—to respond effectively to real-world emergency situations.

AI-powered simulation platforms, virtual software, adaptive learning systems, and gamification methods teach students how to make timely and appropriate decisions

during crises. These methods contribute significantly to knowledge enhancement, skill reinforcement, and psychological readiness. Furthermore, AI systems offer opportunities for early risk detection and the development of preventive strategies in educational contexts.

Recommendations

Broadly implement AI-based platforms in emergency preparedness programs across schools and educational institutions.

Organize additional courses to improve students' digital literacy and teach them proper use of artificial intelligence tools.

Develop professional development programs aimed at building teachers' skills in applying AI technologies in the classroom.

Adapt and regularly update AI-driven software dedicated to emergency preparedness to align with the national education system.

Establish personalized learning trajectories for students based on their individual development levels through AI-supported analytics.

Final Conclusion

In conclusion, it is important to emphasize that artificial intelligence technologies play an invaluable role in cultivating a culture of life safety among students. Their integration into education ensures not only the acquisition of practical emergency response skills but also contributes to fostering critical thinking, rapid decision-making, and psychological readiness. Therefore, continued research, innovation, and refinement in this field are essential for sustaining progress and maximizing the educational impact of AI in ensuring student safety.

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