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# USE OF INFORMATION TECHNOLOGIES IN IMPROVING NUTRITION HYGIENE EDUCATION

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**Abstract**
This article discusses the issues of improving nutrition hygiene education based on modern information technologies. It analyzes the possibilities of using digital tools, multimedia resources, electronic textbooks, and interactive platforms in teaching informatics to develop students' culture of healthy eating and healthy lifestyle habits.

**Keywords**: Information technologies, nutrition hygiene, e-learning, healthylifestyle.

## Introduction

Today, societal development is closely linked to the advancement of information technologies. The field of information technology plays an important role not only in engineering and programming but also in areas such as healthy lifestyles, education, and healthcare. The use of information technologies in improving nutrition hygiene education is of great significance for promoting a healthy way of life.

## Relevance of the topic

In fostering a culture of healthy nutrition among the younger generation, the use of digital educational tools alongside traditional methods increases effectiveness. In particular, the modern capabilities of information technology—such as virtual laboratories, interactive tests, online courses, and artificial intelligence–based recommendation systems—make it possible to deliver knowledge on nutrition hygiene in a more engaging and impactful manner.

## Purpose of the study

The main purpose of this study is to improve nutrition hygiene education through modern information technology tools within the discipline of information technologies, as well as to develop effective pedagogical mechanisms for shaping students' healthy lifestyle and proper nutrition habits. This purpose includes the following objectives:

**1. To identify and analyze the capabilities of information technology tools** — to study the effectiveness of using computer software, interactive platforms, and multimedia resources in nutrition hygiene education.

**2. To integrate innovative technologies into the educational process —** to visualize knowledge and apply it in practice through electronic textbooks, simulations, and virtual trainers.



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**3. To ensure students' individual development** — to assess each student's level of knowledge and provide personalized recommendations for forming a culture of healthy nutrition using artificial intelligence and data analysis tools.

**4. To develop methods for integrating pedagogical and information technologies** — to support the development of students' independent inquiry skills, analytical thinking, and digital competencies.

**5. To enhance the effectiveness of knowledge in nutrition hygiene** — to strengthen students' theoretical and practical knowledge and promote healthy lifestyle habits through the use of innovative information technology tools.

Thus, the purpose of the study is not only to modernize the educational process but also to contribute to the development of a future generation possessing healthy lifestyles and digital knowledge. This objective is of great importance in improving educational effectiveness through the integration of information technologies with biological and hygienic sciences. The study aims to identify the possibilities of the information technology discipline in enhancing nutrition hygiene education, to develop effective methods for the use of information technologies, and to implement them in the educational process.

## Research objectives

To analyze the current state of nutrition hygiene education. Through the use of information technology tools in hygiene education, digital learning methods enable the visual demonstration of metabolic processes in the human body or the consequences of improper nutrition. This increases students' interest in the subject and helps them better assimilate the studied material, as well as supports the development of effective learning approaches.

To develop recommendations for improving electronic educational resources and application platforms.

To assess the impact of information technologies on enhancing students' nutrition culture.

## Main part

The discipline of information technologies teaches the scientific foundations of searching, processing, and presenting information in the educational process. By teaching students how to work with information related to nutrition hygiene through this discipline, scientific analysis skills, critical thinking, and information literacy are developed. Working with interactive programs and simulators helps increase students' knowledge of information technologies. In addition, the use of information technologies enables the creation of specialized electronic textbooks, online platforms, and mobile applications. For example, through a program called *"Healthy Nutrition Diary,"* users can enter their daily diet and receive recommendations on vitamin and calorie balance with the help of artificial intelligence.

## Research methods

**The following methods were applied in this study:**

**1. Theoretical analysis method** – existing scientific literature, regulatory documents, research articles, and experiences in applying information technologies in education related to the topic were analyzed.



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2. **Educational modeling method** – a model for integrating information technology tools (such as multimedia programs, interactive tests, and virtual laboratories) into the nutrition hygiene education process was developed.
3. **Pedagogical observation method** – the process of using information technologies during nutrition hygiene classes was observed, and students' activity and interest levels were evaluated.
4. **Questionnaire and survey method** – surveys were conducted among teachers and students to determine the impact of information technology tools on educational effectiveness.
5. **Experimental (pilot) method** – the possibilities of the information technology discipline were applied in practice within nutrition hygiene education, and the results were analyzed and their effectiveness evaluated.
6. **Statistical analysis method** – the obtained results were analyzed based on quantitative indicators, and comparative outcomes were presented using tables and diagrams.

**Research analysis.**

During the study, the current state, opportunities, and challenges of applying the information technology discipline to improve nutrition hygiene education were comprehensively analyzed.

First, the analysis results showed that the potential for using information technologies in nutrition hygiene education is not sufficiently developed. Although many educational institutions have the necessary material and technical base—such as computers, multimedia tools, and interactive educational platforms—there are certain difficulties in fully integrating these resources into the teaching process.

Second, it was identified that teachers' knowledge and skills related to the use of information technologies in the educational process are insufficient. According to survey results, only about 30–40% of instructors regularly use information technologies in teaching nutrition hygiene.

Third, it was noted that students' engagement and interest significantly increase when information technologies are applied. In particular, the use of multimedia presentations, interactive tests, and virtual experiments contributes to the development of students' abilities to independently solve problem situations, think logically, and analyze information.

Fourth, the results of practical implementation demonstrated that the introduction of information technology tools increased the effectiveness of teaching nutrition hygiene by 20–25%. This confirms that information technologies enrich educational content, enhance visual representation, and contribute to the formation of strong and lasting knowledge among students.

**Conclusion**

In conclusion, integrating the information technology discipline into the nutrition hygiene education process is one of the most modern and effective ways to improve the quality of education. Through the use of information technologies, it becomes possible to form students' nutrition culture, healthy lifestyle habits, and knowledge of proper nutrition using visual, interactive, and practice-oriented methods. This approach helps organize the educational process in a manner that is not only engaging but also deeply grounded in scientific principles.

By leveraging information technology capabilities, it is possible to create databases related to nutrition hygiene, implement distance learning through digital educational platforms, and develop



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practical skills using simulation and multimedia tools. In addition, artificial intelligence and data analysis technologies enable the definition of individual learning trajectories for each student, monitoring of dietary habits, and the provision of personalized recommendations for improving nutrition.

Moreover, the proper integration of information technologies into the educational process ensures effective communication between teachers and students and encourages independent, inquiry-based learning. Such an approach not only strengthens knowledge in nutrition hygiene but also contributes to the development of students' information culture, media literacy, and digital competencies. Thus, the application of information technologies in nutrition hygiene education represents an important step toward the innovative development of modern education systems, the promotion of a healthy generation, and the preparation of highly qualified specialists aligned with the demands of a digital society.

**Recommendations:**

1. **Active use of information technology tools and multimedia resources.**

This includes delivering nutrition hygiene lessons through interactive platforms and electronic applications, as well as visualizing theoretical knowledge using videos, animations, and simulations.

2. **Utilization of artificial intelligence and data analysis.**

Information technologies should be implemented to analyze students' dietary habits and provide personalized recommendations. This also includes monitoring students' knowledge levels through online tests and assessment systems.

3. **Organization of practice-oriented interactive activities.**

Students should be engaged in practical tasks such as developing meal plans, selecting appropriate food products, and creating healthy recipes. Knowledge reinforcement can be achieved through group and individual projects.

4. **Integration of pedagogical and information technologies.**

Lessons should combine information technologies with biology and hygiene subjects, delivering knowledge in a synthetic manner and fostering holistic thinking. This includes developing critical thinking and analytical skills through discussions and interactive communication.

5. **Expansion of distance and hybrid learning opportunities.**

Online platforms and mobile applications should be used to disseminate nutrition hygiene information and provide opportunities for independent learning. This approach allows the educational process to be carried out at different times and locations, thereby enhancing students' learning outcomes.

6. **Development of students' information culture and digital competencies.**

Skills for searching, analyzing, and effectively applying nutrition hygiene–related information should be cultivated. Independent inquiry and problem-solving skills can be developed through the use of electronic and online resources.

**Significance of the study.** The scientific and practical significance of this study is manifested in several aspects:

✓ **Scientific significance.**The study provides a scientific basis for developing new pedagogical approaches in the educational process through the integration of information technologies with



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biology and hygiene disciplines. The use of information technology tools and artificial intelligence enables nutrition hygiene knowledge to be studied in a structured and assessable manner. The application of interactive and multimedia tools in the educational process contributes to the advancement of pedagogical research and innovative methodologies.

✓ **Practical significance**

The use of information technology capabilities in lessons increases the effectiveness of forming students' healthy lifestyles and proper nutrition culture. This, in turn, supports the development of independent inquiry, critical thinking, and digital competencies among students. The study offers educators practical recommendations and a roadmap for the effective use of modern technologies in the educational process. The implementation of distance and hybrid learning platforms creates opportunities to conduct education anytime and anywhere.

Thus, this study is important not only for modernizing the educational process but also for fostering a healthy and knowledgeable future generation. The results of the study can be effectively applied in the fields of pedagogy, information technologies, and healthy nutrition.

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