



IMPROVING VISUAL AND PRACTICAL TEACHING METHODS IN TECHNOLOGICAL EDUCATION: AN INNOVATIVE APPROACH BASED ON THE NEEDS OF GENERATION Z AND ALPHA

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Abstract

This article discusses the issues of improving teaching methodology in technological education, particularly the need to integrate theoretical knowledge with practical and visual approaches. Based on the characteristics of Generation Z and Alpha, the application of modern teaching methods, including excursions, visual aids, and interactive technologies, is analyzed. The advantages of a practice-oriented approach in the educational process are substantiated.

Keywords: technological education, teaching methodology, visual learning, practical learning, Generation Z and Alpha, excursion, innovative approach

Introduction

At present, the education system is continuously improving in close connection with the development of society, science, and technology. In particular, reorganizing the teaching process in the field of technological education on the basis of modern requirements is of great importance. This is because this field is aimed not only at forming theoretical knowledge but also practical skills, and it is directly connected with production and technology. Traditional teaching methods are mainly focused on oral explanation and the delivery of theoretical knowledge; however, today they are no longer able to fully demonstrate their effectiveness.

Analysis of the Literature on the Topic

Modern students — representatives of Generations Z and Alpha — have been shaped within a digital environment, and they tend to perceive information in a rapid, visual, and interactive manner. Therefore, there is an increasing need to improve teaching methodologies in the educational process, integrate theoretical knowledge with practical activities, and widely implement visual teaching methods. Furthermore, the changing demands of the global labor market, along with the automation and digitalization of production processes, also require a new approach to the content of technological education. From this perspective, preparing competitive specialists who are capable of independent thinking and possess practical skills through the application of innovative methods in the educational process is considered one of the urgent tasks.

Analysis and Results

To improve teaching methodology in technological education on the basis of modern requirements, particularly to develop the scientific foundations for increasing educational effectiveness through the application of visual and practical teaching methods.

To analyze existing traditional and modern teaching methods in technological education; to identify the psychological and cognitive characteristics of Generation Z and Alpha students; to substantiate the didactic possibilities of visual teaching methods; to develop mechanisms for integrating theoretical knowledge with practical activities; to highlight the influence of excursions and practical training on educational effectiveness; and to analyze the possibilities of using modern information and communication technologies.

For a long period of time, teaching methodology in technological education has been based on traditional approaches. In this approach, the teacher appears as the main source of information, while the student performs the role of a passive recipient. As a result, independent thinking, problem-solving abilities, and creative approaches are not sufficiently developed among students. Modern pedagogical research shows that active acquisition of knowledge is achieved not only through listening, but also through active participation, experimentation, and practical training. Therefore, it is necessary to reorganize teaching methodology on the basis of a student-centered approach.

Representatives of Generations Z and Alpha have grown up in an environment where information technologies are highly developed, and their learning style significantly differs from that of previous generations. They:

perceive visual information quickly and effectively;

prefer short and precise information;

demonstrate a high interest in interactive and practical activities;

strive for independent learning.

Therefore, it is advisable to use visual, interactive, and practical approaches instead of long and complex lectures in the educational process.

Visual teaching methods contribute to students' rapid and effective acquisition of knowledge. Explanations through diagrams, graphs, video lessons, models, and real objects expand students' imagination and help them understand the subject more deeply. Visual methods play an important role not only in delivering knowledge but also in reinforcing it. Students retain the information they see for a long period of time and are able to apply it in practice.

Practical teaching is considered an integral part of technological education. Through laboratory work, workshop sessions, and experiments, students connect theoretical knowledge with real activities. Excursions are among the most effective forms of teaching, as they provide students with the opportunity to directly observe production processes.

This process:

strengthens theoretical knowledge;

increases professional interest;

ensures learning in a real environment;

enhances students' motivation.

Today, digital technologies are widely used in the educational process. Virtual laboratories, simulations, 3D modeling, and multimedia tools significantly increase teaching effectiveness. With the help of these technologies, complex processes can be simplified and presented to students in an understandable and engaging form. As a result, students' interest in learning increases and independent learning skills are developed.

This article developed the scientific and methodological foundations for the comprehensive application of visual and practical teaching methods in technological education based on the characteristics of Generations Z and Alpha,

and substantiated the impact of excursions and interactive approaches on educational effectiveness.

Conclusions and Suggestions

Improving teaching methodology in technological education is considered one of the important directions of the modern education system. Through the wide application of visual and practical approaches, the level and quality of students' knowledge acquisition increase. Integrating theoretical knowledge with practice, organizing excursions, and using modern technologies contribute to the formation of professional competencies among students. In turn, this creates opportunities for preparing modern, competitive, and highly qualified specialists.

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