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THE HISTORY OF THE DEVELOPMENT OF ENGINEERING DRAWING

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Abstract
The article analyzes the historical and scientific-methodological stages of the development of drafting as a discipline. It examines early graphical representations of ancient civilizations, the formation of scientific foundations during the Renaissance, the standardization of technical drawing during the Industrial Revolution, and the emergence of modern CAD technologies. The importance of drafting in engineering education and professional competence development is substantiated.

Keywords: Drafting, engineering graphics, descriptive geometry, projection, CAD, historical development.

1. Introduction

Technical drawing has been one of the important disciplines throughout all stages of human development. It serves as a means of transmitting information in graphical form in the fields of manufacturing, architecture, mechanical engineering, and construction. The formation of modern engineering graphics is the result of a long historical process.

Research Methodology

This article employs historical, systematic, and comparative-analytical methods. Based on scientific sources, the stages of development of technical drawing are analyzed, and their role in engineering education is evaluated.

Main Part

1. Graphic Representations in Ancient Times

Rock carvings created during the primitive communal period are considered the earliest forms of graphic expression. In the architecture of Ancient Egypt and

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Mesopotamia, simple plans and dimensioned drawings were used in the construction of buildings. This indicates that technical drawing developed based on practical needs.

2. The Renaissance and the Formation of Scientific Foundations

During the Renaissance, technical drawing became integrated with art and science. Technical sketches created by Leonardo da Vinci demonstrate the high level of development of graphic thinking.

Later, Gaspard Monge established the foundations of descriptive geometry and systematized the projection method scientifically. This laid the groundwork for the formation of technical drawing as an independent scientific discipline.

3. The Industrial Revolution and Standardization

In the 18th–19th centuries, the Industrial Revolution led to the development of mechanical engineering, and the accuracy of technical documentation became crucial. As a result, drawing standards, dimensioning rules, and systems of conventional symbols were developed. The graphic language became a universal means of communication.

4. The Modern Stage: CAD Technologies

In the second half of the 20th century, the development of computer technologies led to the emergence of computer-aided design systems. In particular, the AutoCAD program began to be widely used in the field of engineering graphics. Today, 3D modeling and BIM technologies are opening new opportunities for creating and transmitting graphic information.

Results and Discussion

The analysis shows that throughout historical development, technical drawing has evolved from a practical necessity to the level of a scientific system. In the modern stage, it has reached a new qualitative level through integration with digital technologies. This process also requires updating the content of engineering education.

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Conclusion

The history of the development of technical drawing demonstrates its close connection with human progress. From ancient graphic representations to modern CAD technologies, these stages reflect the evolution of engineering thinking. Today, technical drawing plays an important role in the formation of professional competencies.

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