

## THE IMPORTANCE OF MATHEMATICS IN GENERAL SECONDARY EDUCATION

Toshboyeva Feruza Atamjanovna

Tashkent State University of Economics Academic Lyceum.

### Annotation

Mathematics is often perceived as a challenging subject, provoking a range of emotions from enthusiasm to anxiety among students. However, its significance in general secondary education cannot be overstated. Beyond being a subject to pass exams, mathematics equips students with critical thinking skills, problem-solving abilities, and a foundation for various careers. Mathematics is more than just numbers and equations; it is a tool that enhances cognitive abilities. The process of learning and applying mathematical concepts stimulates the brain, fostering logical reasoning, analytical thinking, and strategic planning.

**Keywords.** cognitive development, problem-solving skills, real-world applications, preparation for higher, education, technological literacy, enhancement of analytical, thinking, global competitiveness, critical thinking, logical reasoning, transferable skills.

### Introduction

These cognitive skills are not only beneficial in the realm of mathematics but also contribute to overall intellectual growth, helping students succeed in various academic disciplines. One of the primary objectives of teaching mathematics in secondary education is to cultivate strong problem-solving skills. The ability to analyze a problem, break it down into manageable components, and formulate a solution is a fundamental skill applicable in all aspects of life. Mathematics provides a structured approach to problem-solving, teaching students to think critically and methodically, attributes essential for success in their academic pursuits and future careers.

### Research Methodology

While students may question the relevance of algebraic equations or geometric theorems in their daily lives, the truth is that mathematics is deeply embedded in the real world. From calculating budgets and managing finances to understanding statistical data and making informed decisions, mathematical skills are indispensable in navigating the challenges of adulthood. By integrating real-world applications into mathematics education, students can appreciate the practical significance of the subject beyond the classroom.

A strong foundation in mathematics is often a prerequisite for pursuing higher education and specialized careers. Many fields, including science, technology, engineering, and economics, heavily rely on mathematical principles. Students aspiring to enter these

---

domains need a solid understanding of mathematics to excel in their chosen fields. Therefore, general secondary education serves as a critical stage for laying the groundwork for future academic and professional success.

In the digital age, technological literacy is essential for navigating an increasingly complex world. Mathematics plays a pivotal role in understanding and utilizing technology effectively. Coding, data analysis, and computer programming all integral components of the modern workforce require a strong mathematical foundation. By emphasizing the connection between mathematics and technology, general secondary education prepares students to embrace and thrive in an ever-evolving technological landscape. Mathematics encourages analytical thinking, teaching students to examine problems systematically and derive logical conclusions. The process of solving mathematical problems fosters a structured approach to decision-making, which is crucial in various professional settings. Analytical thinking is a transferable skill that empowers individuals to assess situations critically, make informed choices, and contribute meaningfully to their communities.

### **Literature Analysis**

In an interconnected world where, global competition is the norm, a robust education in mathematics positions students to be competitive on the international stage. Nations that prioritize mathematics education in their secondary schools cultivate a workforce with the skills needed to drive innovation, solve complex problems, and contribute to economic growth. Mathematics, therefore, becomes a key factor in determining a country's competitiveness in the global arena.

The flipped classroom model flips the traditional approach to learning by delivering instructional content outside of the classroom through videos or online modules, while class time is dedicated to application, discussion, and problem-solving. In the context of mathematics education, this model allows students to learn foundational concepts at their own pace, often through interactive online modules, before coming to class to engage in collaborative activities and receive personalized assistance from teachers.

The flipped classroom model promotes active learning, as students are actively involved in applying mathematical concepts rather than passively receiving information. It also allows teachers to spend more time addressing individual needs and providing targeted support, catering to the diverse learning styles and paces of students. Incorporating mindfulness and cognitive approaches into mathematics education recognizes the importance of the emotional and cognitive aspects of learning. Strategies such as mindfulness exercises, metacognitive reflection, and growth mindset interventions contribute to creating a positive and resilient learning environment.

### **Results**

Mindfulness practices help students manage stress and anxiety related to mathematics, promoting a more positive attitude towards the subject. Additionally, fostering a growth mindset the belief that intelligence and abilities can be developed through dedication and

hard work encourages students to embrace challenges, learn from mistakes, and persist in the face of difficulties. Modern educational methods emphasize continuous assessment and timely feedback as integral components of the learning process. Instead of relying solely on high-stakes exams, educators use formative assessments, quizzes, and ongoing feedback to gauge student progress and adjust instructional strategies accordingly.

Continuous assessment promotes a growth-oriented approach to learning, where the focus is on improvement rather than a singular outcome. This iterative feedback loop allows students to identify areas of weakness, make corrections, and track their own learning journey. It also provides educators with valuable insights into individual student needs, enabling them to tailor their teaching methods to address specific challenges.

**In conclusion**, the importance of mathematics in general secondary education extends far beyond the confines of the classroom. It is a catalyst for cognitive development, a promoter of problem-solving skills, and a gateway to a multitude of academic and professional opportunities. By recognizing the real-world applications of mathematics, fostering technological literacy, and emphasizing its role in global competitiveness, educators can instill a deep appreciation for the subject in students. As we navigate an increasingly complex and interconnected world, mathematics remains a cornerstone in shaping individuals who are not just academically proficient but also equipped to meet the challenges of the future.

#### References:

1. Akhmedov, B. A., Majidov, J. M. (2021). Practical ways to learn and use the educational cluster. Экономика и социум, 2(81).
2. Akhmedov, B. A. (2021). Cluster methods for the development of thinking of students of informatics. Academy, 3(66), 13-14.
3. Akhmedov, B. A. (2021). Innovative cluster model for improving the quality of education. Academic Research in Educational Sciences, 2(3), 528-534.
4. Kudratilloev, N. A., Akhmedov, B. A. (2021). Methods of use of web-applications on the basis of innovative methods. Ekonomika i sotsium, 3(82).