

# МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА

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## THE IMPORTANCE OF STEM IN MODERN EDUCATION

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### ANNOTATION

STEM is the combination of four disciplines and has practical applications in real world context. There is a growing need for STEM programs in academic institutions as they are focused on the development of critical thinking ability, which is highly valued in the marketplace. The program also helps with the improvement of technology literacy which is necessary in all fields of our life. The benefits further extend to inform the importance of technical degrees and professions to female members of society.

**Key words:** Keywords: STEM, practical application, problem solving, benefits, critical thinking, 21st century, technologies, institutions, society, relevance, technical degree, engineering, schools, implementation, education quality.

## ЗНАЧЕНИЕ STEM В СОВРЕМЕННОМ ОБРАЗОВАНИИ

### АННОТАЦИЯ

STEM - это комбинация преподавания четырех дисциплин и имеет практическое применение в контексте реального мира. Потребность в программах STEM в академических учреждениях растет, поскольку они сфокусированы на развитии способности к критическому мышлению, которое высоко ценится на рынке труда. Программа также помогает улучшить технологическую грамотность, которая является необходимой во всех областях нашей жизни. Преимущества также распространяются на то, чтобы донести важность технических степеней и профессий для женщин в обществе.

**Ключевые слова:** STEM, практическое применение, решение проблем, преимущества, критическое мышление, 21 век, технологии, институты,

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общество, актуальность, техническая степень, инженерия, школы, внедрение, качество образования.

## ZAMONAVIY TA'LIMDA STEMNING AHAMIYATI ANNOTATSIYA

STEM to'rtta fanning kombinatsiyasi bo'lib, real dunyo kontekstida amaliy qo'llanmalarga ega. Akademik muassasalarda STEM dasturlariga ehtiyoj ortib bormoqda, chunki ular bozorda yuqori baholanadigan tanqidiy fikrlash qobiliyatini rivojlantirishga qaratilgan. Dastur, shuningdek, hayotimizning barcha sohalarida zarur bo'lgan texnologiya savodxonligini oshirishga yordam beradi. Imtiyozlar jamiyatning ayol a'zolariga texnik darajalar va kasblarning ahamiyati haqida ma'lumot berish uchun kengaytiriladi.

**Kalit so'zlar:** Kalit so'zlar: STEM, amaliy qo'llash, muammolarni hal qilish, foyda, tanqidiy fikrlash, 21-asr, texnologiyalar, institutlar, jamiyat, dolzarblik, texnik daraja, muhandislik, maktablar, amalga oshirish, ta'lim sifati.

Nowadays, virtually everyone in the field of education has heard the term STEM, which stands for Science, Technology, Engineering and Math. However, the issue of whether STEM teaches all four subjects together or separately has long been widely debated. What needs to be emphasized is its goals that are focused on the solutions of human problems and needs by presenting real life challenges and innovative ways to address them [1].

In other words, this educational reform is not merely the acquisition of knowledge but also its practical applicability in our life.

Despite the growing importance and application, not many know the origins of this concept. It was a project launched by the National Science Foundation in the 1990s in an attempt to develop citizens who are well aware of STEM sciences as well as increase the global status of the US in the field of science and technology [2].

This may explain the high quality of American schools and institutions. Having gained the basic understanding of this term, let us investigate potential benefits from incorporating STEM in education. One of the primary advantages is its capacity to develop problem-solving skills in various contexts outside traditional classrooms [3].

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Indeed, it is a well-known fact that math and science, such as physics lead to increased logical and analytical thinking, which are important elements of problem-solving ability [4].

Since this skill is one of the most important ones to possess and foster in the 21st century, there is a great deal of emphasis on it in educational institutions through various subjects, such as math, physics and even history. In addition, the relevance and importance of the STEM program in education is justified by the proliferation and integration of technologies in almost every facet of our life, including but not limited to education, healthcare and business [5].

Thus, its focus on technology use will help students develop technological literacy which facilitates the process of problem solving. In general, it can be said that STEM in modern education is designed to equip young people with the knowledge and skills that will be necessary in their professional life, especially if they strive to pursue education in science and establish a career in relevant spheres. Some schools are not successful in fostering necessary qualities that will help them thrive in modern life, such as analytical thinking, communication skills, the ability to look from different perspectives and critical thinking [6].

The implementation of STEM programs in such schools can nurture such qualities as this program involve not only intellectual skills but also communication and team-work in order to reach a solution to a particular problem. The development of such skills and qualities are aligned with standards of good education policy. According to the EFA Global Monitoring Report (2005), two factors define the quality of education. The first is recognition and nurturing cognitive abilities of students and second is the promotion of social values and attitudes as well as emotional development. As you can see, the benefits of STEM projects and programs help modern education adhere to these principles.

It is worth noting that nowadays not many female members of our society pursue science-related degrees and careers. This can be either because they are not aware of the impact they can make to the community or simply lack of interest. For example, engineering is a field which is mainly dominated by male workers. This could be because it is regarded as a men's profession, and many female students fail to comprehend the positive effects of engineering on society [7].

As a result of STEM programs, this profession might experience a significant proportion of female engineers in the future, which will make the working field even

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for female workers. One important function of education is to create a society where both men and women are treated equally and even in terms of professional and personal aspects. By encouraging more female students to undertake technical degrees, the STEM program fulfills this unwritten obligation upon education.

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