

**СЕКЦІЯ: STEM-ОСВІТА: ШЛЯХИ ВПРОВАДЖЕННЯ, АКТУАЛЬНІ ПИТАННЯ ТА ПЕРСПЕКТИВИ**

**STEM AS A KEY TO SUCCESS IN THE ENGINEERING EDUCATION**

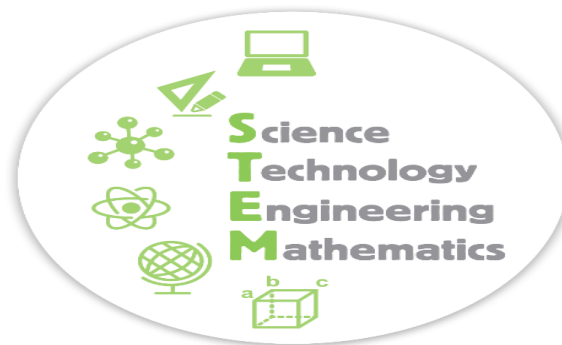
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**Abstract:** The educational reform of science and mathematics is progressing at a slower rate than the development of advanced technologies. The acronym STEM (Science, Technology, Engineering and Mathematics) has been accepted by many programmes as an important point in the rapid development of science education methods. The paper presents the the STEM system's attitudes and its use in the engineering education.

**Introduction**

STEM is a curriculum based on the idea of educating students in four specific disciplines: science, technology, engineering and mathematics in an interdisciplinary and applied approach (see Fig. 1.). Rather than teach the four disciplines as separate and discrete subjects, STEM integrates them into a cohesive learning paradigm based on real-world applications.



*Fig.1. STEM education*

In the world, the term STEM (formerly METS) is usually used to refer to education policy and curriculum selection in schools in order to increase competitiveness in the development of science and technology. This has an impact on labour force development, national security issues and immigration policy in some countries [1, 2]. A good example is the United Kingdom or the United States of America. Education systems and schools play a key role in determining children's and young people's interest in STEM subjects, as well as in ensuring equal opportunities to access and benefit from high-quality STEM education [2, 3].

**STEM as blended learning**

What separates STEM from the traditional science and math education is the blended learning environment and showing students how the scientific method can be applied to everyday life. It teaches students computational thinking and focuses on the real world applications of problem solving.

Research shows that teaching students in groups is very effective when it comes to mastering STEM concepts. Whether students are working on a joint project, taking part in robotics classes or building LEGO-TECH models, teamwork promotes understanding and problem-solving skills. Students learn most effectively when it takes place in the real world, not via screens. Using hands and mind to build models, understanding of mathematics and engineering becomes real.

### **Conclusions**

Looking at the interest in training and conferences on STEM and programming, it is safe to say that from year to year the number of teachers expanding their workshop with «digital assistants» is increasing. They use a variety of advanced tools. After all, each teacher looks for the most beneficial solutions for their subject.

It is not enough to choose just any board, program, game or robot. It is worth remembering, especially when choosing equipment that is modern and adequate to the age of students. Reliability and prepared appropriate methodological casing, and at the same time the support of the distributor are another important aspects that are worth thinking about before choosing a system.

### **References:**

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2. Gonzalez B., Kuenzi J.: Science, Technology, Engineering, and Mathematics (STEM) Education: A Primer, CRS Report from Congress, 2012.
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## **СЕРЕДОВИЩА РОЗРОБКИ 3D МОДЕЛЕЙ АРХІТЕКТУРНИХ СПОРУД**

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Сьогодні 3D - моделювання знаходить своє застосування в багатьох галузях людського життя. Однією з таких є візуалізація макетів архітектурних споруд, мікрорайонів, селищ з усією інфраструктурою. Жодна раніше створена технологія не відтворить так точно макет, як 3D-моделювання. Вибір оптимального