

NSPE Position Statement No. 1768—Science, Technology, Engineering, and Mathematics Education

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The National Society of Professional Engineers (NSPE) recognizes that a robust education in science, technology, engineering, and mathematics (STEM) is critically important to the continued economic prosperity and national security of the United States, and that a strong national STEM education policy is required to ensure that all students receive adequate STEM education.

STEM education is especially vital at the K–12 level, when students develop a foundational understanding of STEM concepts and form opinions about these areas that will influence their future educational and career choices. This is particularly true at the elementary and middle school levels.

Improved STEM education is necessary not only to cultivate more STEM professionals; such knowledge is fundamental for all citizens to successfully live and work in an increasingly technical society. Citizens must have a greater understanding in STEM fields to function in daily life; to make informed decisions on matters that include their health care, environmental protection, and energy generation and conservation; and to provide meaningful input to their elected representatives on public policy issues.

NSPE asserts that a greater emphasis must be placed on the engineering aspect of STEM education. Studies conducted by the National Academy of Engineering (NAE) have found that students, particularly girls and underrepresented minorities, are greatly influenced by teachers and courses as they progress through sixth grade. If we are to increase the number of engineering graduates, it is essential that we ensure that all students possess an understanding of the creative processes, the challenges, and the rewards of engineering.

To achieve these goals, NSPE believes that there must be significant change to the core curriculum in the K–12 levels. Improved STEM education is needed for all students, and students who exhibit an aptitude for, or an interest in, pursuing STEM fields must be provided with additional opportunities for increased education in STEM-related courses.

NSPE recommends that national STEM professional societies, business and industry leaders, educators, federal agencies, and other stakeholders with an interest in improving STEM education partner to develop a national STEM Strategic Plan for K–12 education and oversee its implementation. The well-being of our citizens and the future of our nation are at stake.