2010 Lemelson-MIT Invention Index reveals ways to enhance teens' interest in STEM

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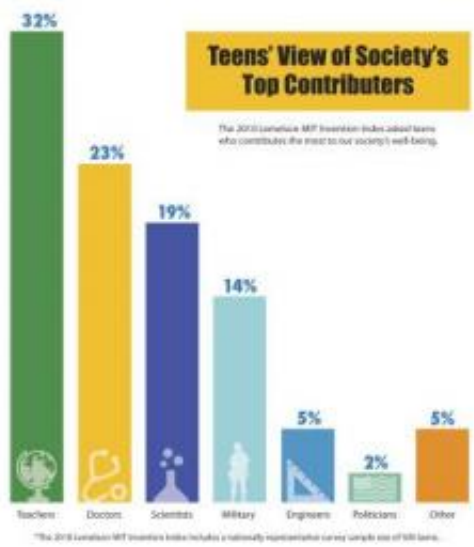

The 2010 Lemelson-MIT Invention Index asked teens who contributes the most to our society's well-being. Credit: Lemelson-MIT Program

The nation is hoping for a bright future. Many believe the key to strengthening the U.S. economy and competing globally lies in fostering an innovative culture and educating America's youth in science, technology, engineering and mathematics (STEM). According to this year's Lemelson-MIT Invention Index , an annual survey that gauges Americans' perceptions about invention and innovation, teens are enthusiastic about these subjects, with 77 percent interested in pursuing a STEM career.

Hands-On Learning Approach Needed

The positive findings of this year's survey come on the heels of President Obama's introduction of Educate to Innovate, a campaign designed to increase interest and improve performance of U.S. students in STEM. The focus of Educate to Innovate is on hands-on activities outside the classroom, which the Lemelson-MIT Invention Index revealed is one of the most effective ways to engage youth ages 12 through 17.

Teens listed activities such as field trips to places where they can learn about STEM (66 percent) and access to places outside the classroom where they can go to build things and conduct experiments (53 percent) as the best ways to get them interested in these subjects. Highlighting the need for non-traditional learning regardless of setting, two-thirds of teens chose hands-on individual projects and hands-on group projects as the types of classroom-based educational methods they enjoy most. This finding aligns with recent reported trends on an increasing interest in tinkering and hands-on work.

"Increasing teen's exposure to STEM through hands-on activities will result in a more positive perception of these important subjects," said Leigh Estabrooks, invention education officer with the Lemelson-MIT Program, a non-profit organization that recognizes outstanding inventors and inspires young people to pursue creative lives and careers through invention. "It's encouraging that the White House and large corporations are taking a vested interest in STEM education. Supporting teens and giving them the resources to pursue these fields is vital."

Power of Teachers, Mentors in STEM Education

The survey also found that while in the classroom, educators play a powerful role in exciting teens about STEM - more than half of teens

(55 percent) would be more interested in STEM simply by having teachers who enjoy the subjects they teach. The 2009 Lemelson-MIT Invention Index found that mentorship plays an important role in teens' motivations; 43 percent said that role models in STEM fields would increase their interest in learning about these areas.

An overwhelming amount of respondents wishing they knew more about STEM in order to create or invent something (85 percent); however, a majority might be discouraged from pursuing professions in these areas due to a lack of understanding of the subjects or what people in these fields do, and not knowing anyone who works in these fields (51 percent). In addition, with less than one-fifth of respondents feeling scientists contribute most to society's well-being, and even fewer selecting engineers (5 percent), many teens may lack a full understanding of the societal impact that STEM professionals have, further exposing the need for teachers and mentors in these areas.

Fostering Needs of Future Innovators

The Lemelson-MIT InvenTeam initiative is one way teens can get direct access to hands-on learning and STEM professionals. InvenTeams are teams of high school students, teachers and mentors that receive grants up to $10,000 each to invent technological solutions to real-world problems. InvenTeam projects this year include a portable, human-powered UV water filtration device, a physical therapy chair designed to reduce muscular atrophy, and a temperature-sensitive color-changing roof to combat global warming.

Joshua Schuler, executive director of the Lemelson-MIT Program, says, "Despite the need for more hands-on educational programs, it's encouraging to know that today's teens do have aspirations to invent and innovate. Schools and companies need to continue to facilitate access to STEM tools and mentors, and encourage teens to pursue their inventive

passions." Schuler adds, "Introducing students to STEM at a young age helps them connect the dots between everyday invention and careers that can improve society and the U.S. economy."

Provided by Lemelson-MIT Program

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