

# Early exposure to STEM motivates girls in positive ways

By **Lauren Loock Wilcox** - August 3, 2021



*Young women may find inspiration to pursue a STEM-related career by observing women in STEM jobs. (wocintechat.com)*

A recent study by [Pew Research](#) shows women continue to be underrepresented in technology-type fields despite efforts by colleges and businesses to create an all-inclusive environment.

To see more than a small handful of girls in any college science, technology, engineering or math class would be unique to most universities – and educators believe a lack of female support may be a contributing factor.

Women seem to have their minds made up before they set foot on college campuses, and lack of exposure in early education may be the cause.

A more in-depth look at the study done by Pew shows the STEM gap is closing, with women making up 50% of careers in 2019. While this number seems promising, 74% of these women hold a job in health care, while fields such as math, technology and engineering continue to fall short, holding fewer than 25% of female careers.

Amy Jenkins, a material science and engineering major at Salt Lake Community College, thinks girls would be less hesitant to pursue STEM studies if teachers and parents normalized these subjects rather than prefacing them as being difficult or far-reaching.

“There is a misconception that [girls] have to be super nerdy or extra smart,” Jenkins said, comparing studying STEM to driving a car. “Everyone can learn to drive. It’s not a ‘man thing’ or a ‘nerdy girl’ thing to do.”

Gabrielle van Brunt, an aerospace engineering major at Utah State University, theorizes that it's predetermined from a young age for girls to hate math and science.

"There's a lot that can be done in the way teachers present [STEM studies] to keep it from deterring students from going into those fields," said van Brunt, explaining that the attitude of parents and teachers is key to encouraging young minds.

As the president of Utah State's chapter for the [Society of Women Engineers](#), van Brunt and her team visit various elementary schools in northern Utah to do engineering experiments, such as creating paper and straw rockets. Their hope is to pique interest in engineering for all kids and to show young girls they do belong.

According to NASA, of the 565 people who have traveled in space, [65 were women](#). These women held many different jobs in space, including astronaut, cosmonaut, and space station specialist. However, young girls who watch media coverage of space shuttle launches may notice the low number of women, which could explain why some girls don't think they belong in STEM studies.

Studies show that girls, and boys, tend to associate people working in the sciences as men. A 2006 exercise, later published by the [Journal of Applied Social Psychology](#), asked several elementary-aged girls to draw someone working as a mathematician or similar STEM field. The experiment revealed that girls were twice as likely to draw a man in these fields as opposed to a woman.

The question educators are facing is how to encourage girls in these fields from a young age. A study by [Columbia University](#) found that men tend to use the left side of the brain (verbal reasoning) while women stick to the right (visual, verbal and emotional connection.)

Some teachers, like Andrea Wood, choose to tackle STEM subjects in a way that taps into the left, more creative side of the brain.

"I use a lot of music in my teaching," said Wood, a fourth-grade teacher in the Granite School District. Wood explained that students perform far better in notoriously difficult subjects such as math if she introduces concepts to the tune of a catchy song with matching dance moves. Something else that has worked well for Wood is to connect difficult-to-understand STEM subjects to things that are fun, and she does this by using real-life examples.

Jamie Titensor, an engineering teacher at Viewmont High School, believes girls usually have their minds made up about whether they are STEM material before they get to high school. For the girls that do take her class, Titensor does her best to facilitate them by discussing their futures and encouraging them to stick with their studies in college – even if they are the minority in their classes.

Titensor received a bachelor's in engineering from Brigham Young University and experienced being one of the only women in several of her classes. She hopes she can be a role model for high school girls, showing them a woman can be successful in STEM.

"Girls are just as smart as boys, but we have a lot [of] options these days," said Titensor.

According to [Harvard Business Review](#), 40% of women who receive engineering degrees eventually quit their job. While the most popular reason is to raise their family, the harsher reality is due to toxicity in the workplace.

In the review, the women discussed that they often felt treated stereotypically, for example, being assigned as the secretary in group projects while the men did the "real engineering work."

Titensor believes women have a high emotional IQ and thinks they are more likely to remove themselves from a situation where they don't feel accepted.

In a [2020 study](#) done by BYU, researchers learned that women are less likely to speak up if they are outnumbered by their male counterparts. This is a circumstance that isn't always caused by sexist tendencies, but rather due to the preconceived idea of a cultural norm. For some women, walking into a classroom full of men would be a deterrent or a reason to drop the class.

Sharalyn Beazer, a math teacher at Viewmont High School, noted that being the only girl didn't bother her.

"I was an electrical engineer major for a while, and in my calculus class there were two girls, and the rest were guys," said Beazer. While the lack of females in her college courses never swayed her STEM goals, Beazer admits it was the pressure of the culture she was raised in that eventually pushed her to change her major to teaching – a career, she was told, that was more appropriate for a woman.

The BYU study suggests that women are more likely to speak up if there are multiple other women within the group. Beazer uses this idea in her classroom as she pairs students together. By putting more girls together in a group, she hopes they feel supported by one another and empowered to speak up.

Today, Beazer said she sees more girls in her math classes, including honors and continuing education classes. Inspiring girls in high school and earlier education, Beazer said, is key to further bridging the gap.

Women role models, engaging classwork, and normalizing subjects previously seen as "nerdy" are a few steps to motivate girls towards STEM. Programs like ["Stem like a girl"](#) – a nonprofit organization created to empower elementary-aged girls through virtual workshops – may spark something everlasting within young girls.

"When girls know what they're talking about," Beazer said, "society needs to listen."



*Most boys and girls think science is for men, but women are actively part of STEM jobs as well. (Science in HD, Unsplash)*