

A Futuristic Vision of STEM Education

The future of STEM education looks promising with the rise of spatial computing which uses virtual, augmented, and mixed reality technologies. These technologies let users become immersed and interact with virtual objects in the real world. In recent years, spatial computing has grown its uses in many activities of daily living such as jobs, shopping, travel, entertainment, and education. The technology continues to get better and cheaper and will soon become as accessible to people as mobile devices are today. The coming 20 years will apply spatial computing to make huge impacts on STEAM education for students, teachers, workforce access to education.

Student learning is a pedagogical challenge because every student learns differently. One of the most efficient way to improve student's knowledge retention and learning speed is by creating an interactive environment. Spatial computing will be used in lectures to explain topics that need a new level of illustration such as calculus, chemistry, physics and more. In the same way, mixed reality glasses will offer both distance learners and local learners to interact with virtual lab equipment and get customized feedback.

Faculty and instructors will benefit from spatial computing as well, enabling them to partner with VR & AR developers to design their own content and become immersed with their students to better guide them in the learning experiences. These technologies will also expand the possibilities for lectures and labs, allowing teachers to expose their students to virtual experiences from the real world that would otherwise be too dangerous or impractical.

The student and corporate relationship will increase with the use of spatial computing by creating virtual reality classes hosted by employers and virtual training modules for students. Combining virtual classes that teach the student skills needed in the industry and training modules that expose the student in the real-world environment will increase hands-on experience and employment opportunities after graduation, while decreasing training time and enabling new hires to begin working on real projects much sooner.

Currently, freely accessible online learning tools already enable high quality content to be shared for learning. In the future, spatial computing content will similarly be accessible to everybody and society will have an opportunity to get access to the content for a low-cost tuition.

Indeed, STEAM education in 20 years will be impacted greatly by spatial computing. This technology will create new ways of learning and teaching during lectures and labs. Industry will provide education and training of students in realistic environments. Finally, society will have more opportunities to get educated and with that our country will go for a better future altogether.