# A New Way To Learn

## Students Dive Into Virtual Reality Pilot Programs In Dist. 207

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Over the past school year, students in Maine Township High School Dist 207 have been able to walk through homes and fix vehicles while hardly leaving their seats.

This month, the Journal & Topics dropped in on two different classes at Maine East High School in Park Ridge, where students were using virtual reality software in the classroom: automotives and a computer-aided design class.

These classes have been piloting use of the technology in the district, according to Maine East Career and Technical Education Dept. Chair Becky Stewart.

"We're kind of ahead of our time," Stewart told the Journal.

Most who are familiar with virtual reality probably associate it with video games. However, it's practical applications in manufacturing and medicine are becoming more and more common, Stewart said.

In Ken Adkins' automotives class, students do use a game to hone their skills. He said the technology creates more opportunities to practice at a faster pace than on an actual vehicle, without having to lift up cars or risk breaking tools and parts.

"In the beginning they were a little hesitant," said Adkins of his students, many who had never used virtual reality technology before. "Now, all the students are really into it."

"It helps us get comfortable," explained Mikey Decolongon, one of Adkins' students.

Unlike most computer programs used in schools, virtual reality software requires the user to wear special goggles. These goggles create the sensation that the wearer is physically inside a digitally-rendered, interactive environment. Controllers similar to those used for video games are also used.

While the goggles create the visual and spatial sensation of being in a specific environment, the controllers provide "force feedback" vibrations so users actually feel like they are holding tools.

"Sometimes you really think it's real, you duck your head," said Damian Watkins, a student who used the software to simulate a brake-change exercise for the class.

In addition to allowing for more practice time, Adkins said the virtual reality program lets him demonstrate procedures without making students huddle around a car. This gives him more time to spend on individualized education for each student.

Over the past year, he has seen a significant improvement in student learning thanks to the program.

According to Stewart, "providing authentic learning opportunities for students at an individualized level," is the main goal of incorporating virtual reality into instruction.

Going forward, she said the district hopes virtual reality will have other positive impacts on individualized learning. This November, Dist. 207 plans to look into purchasing Oculus Rift technology from Google that would allow students to work on their own with G-code, or a computer programming language for machine tools.


Maine East computer-aided design teacher Robert Payne demonstrates how to use the virtual reality program used in his class.

Currently, students in architecture, geometry and construction classes are also benefiting from virtual reality resources in Dist. 207.

"This is a better way to get a feel for how it will work," said Nick Lamerdin of the program used in his computer-aided design class with teacher Robert Payne, where students create models of buildings. "We really wouldn't have a sense of how big things would actually be."

Lamerdin, who took construction and design classes at Maine East before virtual reality was offered, said the software has made his learning experience much better. He said this virtual reality software is easier to use than the one utilized in automotive classes.

In the class, students also use industry-standard software to create two-dimensional versions of architectural designs. Sometimes, things that look buildable in these models don't work out in real life.

"A room that's five-by-five seems doable," said Stewart. "But, when you can stretch your arms out and touch the walls, you realize that's not really good for design."

Making sure their designs work in the real world is especially important for this class, as they create two homes each year for Habitat for Humanity. Now, students can really get a sense for how it will feel inside those homes before they start putting up beams.

Virtual reality simulations have been particularly useful for students this year, as they were required to differentiate between architectural styles, according to Payne.

"For the two homes we built this year, there were two different architects and two different construction methods," he said while demonstrating how to use the program. "You can see every individual stud and how the doors and windows are all built."

Students build the Habitat for Humanity homes on the Maine East campus. Then, they are taken apart and shipped to families in need. Occasionally, students are able to work at the actual construction site, though many do not. This technology also gives them a chance to see how the finished home might look.

Virtual reality has also been implemented at Maine South High School in Park Ridge and Maine West High School in Des Plaines, the two other schools in the district.

"If it's good for one, it's good for all," said Stewart of the Dist. 207 philosophy.

Since use of the technology has been successful so far, she said the district plans to expand its use further to include applications in science and foreign language classrooms. For example, virtual reality could be used to offer students language immersion experiences -- such as ordering food in a cafe -- that previously would have been possible only through study abroad programs.

"We can't just excuse a student for a semester to go to Spain," said Stewart. "These virtual realities allow our students to go into a place, hear the language around them and then have to do simple communication."

Another facet of virtual technology, which the district hopes to bring to students going forward, is augmented reality.

Instead of creating a simulation of a physical space like the previously mentioned virtual reality programs, augmented reality superimposes virtual aspects on to a real space. One of the most popular examples of the technology is the game Pokemon Go, where players can interact with cartoons on their phone superimposed over physical space.

Use of this technology could be useful in science, mathematics and more, Stewart said: "It's just a new way to learn."

Maine East students Damien Watkins (seated) and Mikey Decolongon (standing) work together to practice automotive skills using virtual reality software. (Lauren Barry/Journal photos)