Imagine automotive students learning to take apart engines in virtual reality, or using an augmented reality headset to identify all the parts in an engine they’re actually working on. It sounds right out of Star Trek, right?

But Oregon Story Board, a Portland nonprofit that specializes in the “support of digital storytelling,” is working with Intel and Clackamas Community College to build exactly this system. Their tool of choice? Microsoft’s HoloLens. The device only just became available for preorder to developers, but the
college hopes to have it integrated into an automotive repair class by September.

**Related:** Hands on: Microsoft HoloLens

“How can we take something as high-tech and exclusive as HoloLens, and put it in the hands of more people?”

Microsoft, certainly, hopes that Midthun is right. There’s a lot of hype building around the HoloLens, which uses a clear lens to augment the real world with 3D holograms. But while the tech is impressive, there’s plenty of questions to ask about this early technology. Mainly, what will it actually do?

“At the highest level, what interests Microsoft is working out what the HoloLens can be used for,” Tawny Schlieski, Chairman of the Oregon Story Board and Research Scientist at Intel, told Digital Trends.

With this in mind, Microsoft has announced five $100,000 grants, each accompanied by two highly sought after HoloLens Development Kits, to researchers around the country. Over 600 organizations applied with their ideas for the technology, and the Oregon Story Board team was one of only five winners.

One of the winning pitches? Use the HoloLens for hands-on education in the trades, specifically the automotive department at Clackamas Community College. Microsoft found the idea intriguing enough to let them give it a shot.

“The reason that Microsoft is interested is the hands on component,” said Schlieski. “The ability to have feedback layered immediately over real objects.”

The grant is in hand, and the development kits are coming soon. Now the software needs to be built.

**BRINGING THE FUTURE TO THE MASSES**

If using a futuristic prototype in a community college automotive class sounds unique, that’s not an accident.

“It was extremely intentional,” said Midthun. “How can we take something as high-tech and exclusive as HoloLens, and put it in the hands of more people?”

Virtual reality, which uses a headset to fully immerse people in a simulated environment, is tied to gaming in the popular imagination. Augmented reality, which supplements the real world, is less widely known, and use cases haven’t been fully worked out yet. Google tried with Glass, which was initially marketed as a sort of lifestyle device. An early promotional video showed a user drifting from his apartment to coffee shops, without clear objectives.
The HoloLens isn’t aiming to be that sort of consumer device, a smartphone that happens to sit on your face. Instead, Microsoft is positioning the HoloLens as an immersive workstation, a device with specific work-driven purposes. Think more PC than iPhone.

**Related:** Microsoft will send HoloLens to space again, hopes the rocket won’t blow up this time

Most of the proposed purposes have been far from the lives of average people, however.

“We’d seen videos of augmented reality being used at medical centers, and at NASA,” said Midthun. “We wanted to put this technology into the hands of community college students.”

**A SKEPTICAL AUTOMOTIVE PROFESSOR**

Rick Lockwood, a professor in Clackamas’ automotive department, admitted the idea sounds cool. But he isn’t sure how it will fit into the day-to-day educational workflow.

“The people that we train are hands-on people, they’ve got to get their hands on stuff,” Lockwood told Digital Trends. “Nothing is like getting under the hood of a car, there’s no better training than being on a car.”

A simulated engine, to him, doesn’t sound practical for instruction — at least, not without some sort of assessment for putting things together properly.

“A really complex digital model can have tremendous fidelity in a way that a picture cannot.”

“They want to do a virtual assembly of an engine of some sort, and that would be just fine,” said Lockwood. “But what’s preventing the students from putting it together wrong, or missing a step?”

**Related:** Microsoft issues $100,000 and two HoloLens kits to five different schools nationwide

Any simulated engine, to Lockwood, needs consequences when things are put together incorrectly. But what if the engine isn’t simulated? What if the HoloLens could recognize, a real-world engine and point out what all the parts are using an AR overlay?

“That would be much more useful, for sure,” said Lockwood.

**A SERIES OF COMPLEX DESIGN QUESTIONS**

Lockwood is helping to guide the design process.
“We’re working with the automotive department to find out what the best thing to do is,” Midthun said. “We’re not going to build something that the instructor finds useless. We’re going to explore where they think this augmented reality addition could provide additional instruction.”

**Related**: [Here’s how you can try out Microsoft’s amazing HoloLens for yourself](http://www.digitaltrends.com/computing/is-hololens-the-future-of-education/)

But before the HoloLens can be used in class, someone has to build the software. That’s what a class in session right now is trying to do. Students from Clackamas, other nearby community colleges, and even a few area high schools, are learning the tools necessary for HoloLens development alongside a variety of industry professionals.

“People from the Indie game community allow us to access talent from the coding side of things, while people with film and animation backgrounds allow us to bring that content creation and creative to the table,” said Midthun.

Together the class will learn to design objects for HoloLens. 3D models will be created in Maya, then exported to the gaming engine Unity, then finally ported over to the HoloLens SDK. The current class is learning to use all these tools together, and an upcoming class will focus on building the engine-building tool for Clackamas’ automotive department.

**DESIGNING THE FUTURE OF EDUCATION**

“There’s a design school tradition of taking a class and working together on a single project,” said Schlieski. “Once we get the basics of using HoloLens, then the class works to collaborate to build a training curriculum in HoloLens for the automotive students.”

“Technology isn’t its own thing, technology runs through everything we do. AR and VR

The real challenge will be one of design. How can this new tool best be put to work for practical education? The focus on engines provides a starting point, because 3D models of engines already exist.
One idea would be for the cameras on the HoloLens to recognize objects, and possibly identify them for students.

“A really complex digital model can have tremendous fidelity in a way that a picture cannot,” said Schlieski. “Augmented realities that point out components, and offer step-by-step instruction, could prove invaluable to trade schools.”

The cameras on the HoloLens could also prove invaluable. Instructors might see through their students’ eyes, even from far away, allowing them to give real-time feedback during hands-on exercises.

“If you can share the same view as someone, they could see whether what you’re doing is what she asked you to do,” said Schlieski. “There are layers of fidelity.”

Education is changing. More classes are being taken online, which is giving more opportunities to people in rural areas without physical access to institutions. But remote classes aren’t great for hands-on learning and trades. Technology like the HoloLens could be big on this front, giving simulated environments for students to learn in, and also giving professors the means to offer hands-on instruction from afar.

“What tools can help make that remote learning experience more robust and more satisfying?” asked Schlieski.

**BRINGING ECONOMIC DIVERSITY TO THE FUTURE OF TECH**

Schlieski hopes technology like the HoloLens can help make design more accessible, even to non-programmers.

“A lot of the optimism, and the desire for these other tools, is for something that’s a little more fluid. Less in machine code, more in human code,” said Schlieski.

Tools that allow creators to think visually, instead of in terms of code, could change the way games and other content is created. As this future takes shape, it’s important to think about design from multiple perspectives. To Midthun, working with a community college to supplement education in the trades is one part of a broader mission to bring more diversity — social and economic — to the conversations around futuristic technology.

**Related:** Could Microsoft’s HoloLens tech change the way cars are designed?

“We’re trying to expand what has been a very elite, similar group of humans
that design things for people like them," said Midthun. “Technology isn’t its own thing, technology runs through everything we do. AR and VR are going to be widespread, so let’s make sure we’re creating a diverse pool of human beings creating the products and services for the very diverse group of human beings that we are on this planet.”

It will be months before any automotive students at Clackamas puts on a headset. The devices themselves haven’t even shipped to the grant winners as of this writing. But in using an early prototype to supplement education in the trades, Microsoft’s grant could make its newest technology more inclusive.

HOW THE MARTIAN’S FILMMAKERS TURNED A JORDANIAN DESERT INTO THE RED PLANET

With Ridley Scott's The Martian nominated for a visual-effects Oscar this year, the magic that brought the surface of Mars to Earth in the popular film is generating quite a bit of buzz for the VFX team.

Posted 4 days ago — By Rick Marshall