



NASH COMMUNITY COLLEGE LEVERAGES VIRTUAL REALITY FOR IMMERSIVE LEARNING

With HP partner MIMBUS, the educational institution created an innovative, proof-of-concept model for students in the heating, ventilation and air conditioning (HVAC) continuing education course.



NASH COMMUNITY COLLEGE

Nash Community College offers academic programs that lead to a degree, diploma or a certificate that prepares learners for the workplace and provides a skilled workforce for the region. More than 10,000 students attend the North Carolina-based institution for vocational, occupation, business and industry-related programs. A few years ago, Nash Community College launched digital offerings, taking 48 programs online.

Although the college already had additional plans to offer continuing education courses online, the COVID-19 pandemic accelerated the move. In collaboration with HP partner MIMBUS, Nash Community College has developed a proof-of-concept solution for its HVAC students to enable an immersive learning experience, increase training time, engage instructors, and ultimately attract new students.



INDUSTRY:
Education



OBJECTIVE:
Develop a solution for students and instructors in the HVAC continuing education course to enable virtual practice and improve learning outcomes in manual skills training.



APPROACH:
Deploy HP Reverb G2 and ZBook Create for hands-on learning, including operating and repairing complex HVAC equipment.

Eye to the future

For the last few years, Nash Community College has been steadily growing its online offerings. Based in North Carolina, the college has shifted roughly 48 programs online, including information technology and science courses for over 10,000 students who study there.

“We knew that continuing education was on the forefront for change,” says Lane Freeman, Ed.D., Department Chair of Digital Teaching and Learning.

“But there are a lot of nuances about continuing education.”

For example, the state has to recognize “seat time,” credit hours and the time students spend on supplementing their learning. Nash Community College was mulling ways to transition its continuing education courses online when the COVID-19 pandemic hit. Continuing education courses came to an immediate halt.

“Students couldn’t come to campus,” Dr. Freeman says. “There were a lot of things that couldn’t happen.”

With guidance from leadership, the college began to mull alternatives to in-person instruction and training. Dr. Freeman and his team began to explore augmented reality and virtual reality options, where students could participate in immersive learning. Vendors within that space offered solutions that relied heavily on gamification technology but lacked the ability to track and analyze learning time. Nash Community College was seeking a solution that took skills certification into account.

“So, you could put a motorcycle into your room, you could work on it some, but how do you track that time?” Dr. Freeman says. “How do you, as the instructor, and how do you, as a parent, see where that student is struggling?”

Partnering toward a solution

VULCAN, a solution developed by HP partner MIMBUS, a leader in vocational training, quickly became the answer. A motion skill learning platform that connects with and manages a wide range of virtual reality training programs and simulators dedicated to vocational skills learning, VULCAN is a secure, cloud-based, scalable

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Lane Freeman, Ed.D.,
Department Chair, Digital Teaching and Learning



IT MATTERS:

Use HP Reverb G2 to create immersive, 3D learning

Deploy MIMBUS' VULCAN secure, cloud-based platform

Set up learning programs with ease

BUSINESS MATTERS:

Reduce training time

Increase familiarity with equipment virtually

Offer access to students and instructors

Track and analyze learners in real time

Engage instructors in alternative methods of teaching

ABOUT NASH COMMUNITY COLLEGE

Nash Community College fosters learning opportunities for students through hands-on experiences, quality instruction, technology, workforce development and community partnerships. Located in North Carolina's Nash County, the college aims to prepare students for a college transfer and vocational careers. More than 10,000 students attend the college, earning associate degrees and continuing education certifications. Visit www.nashcc.edu.

ABOUT MIMBUS

MIMBUS creates innovative solutions targeted at preserving trade skills. The company offers intuitive pedagogical tools coupled with performing simulators, supporting businesses, corporate academies and training institutions to deploy and manage learning solutions as well as developing bespoke training programs. These technologies help lower training costs, risks of accidents and make vocational training an attractive option. Based in France, MIMBUS has a presence in 50 countries, including an office in Chicago, Illinois, in the U.S. Visit www.mimbus.com.

and customizable application for controlling enterprise-wide, group and individual learning. Trainers can plan, track, analyze and assess learning progress and outcomes within the application which also integrates with existing virtual learning or learning management systems.

"The idea is to use an immersive 3-D technology tool to put students in an environment where they feel like they are playing but indeed they are discovering a trade," says Laurent Da Dalto, CEO of MIMBUS.

The VULCAN vocational training platform is delivered by HP VR technology—the Red Dot award-winning HP Reverb G2 headset with its immersive computing capabilities, and HP ZBook mobile workstations that are VR-ready. MIMBUS' partnership with HP goes beyond access to hardware. It offers a gateway to HP technologists, a feedback loop on incorporating advances in technologies, Da Dalto says.

"We are able to discuss ideas with HP in an open way, and say we need 'that' for education," he says. "And they say, 'Yes, we can build that in one or two years.' It's amazing to be part of that process. It's really a gift."

Using HP VR technology, the VULCAN system enables a virtual, realistic learning experience, allowing students to learn at their own pace and get the training time they need while building confidence with new skills. It provides a detailed analysis of students' attempts, enabling feedback and improvement of skills.

This ability to gather feedback and analyze a trainee's efforts, in addition to the immersive learning aspect, prompted Nash Community College to collaborate with MIMBUS and develop a proof-of-concept of the technology. The college first approached faculty who might embrace an innovative form of instruction. Instructors within the HVAC program, who were eager to try something new, agreed to supplement the classroom with virtual teaching. Dr. Freeman and a couple of instructional designers set up the solution to get a better understanding of the time it would take for students to familiarize themselves with the tool. At first, it took an instructional designer roughly 30 minutes to set it up. Soon, as the technology became familiar, that set-up time became increasingly shorter. Dr. Freeman's 12-year-old son gave it a shot as well.



"WE ARE GIFTED TO BE PART OF THE RESEARCH AND DEVELOPMENT PROCESS WITH HP. THIS ENABLES US TO HELP DEVELOP THE VR CONTENT THAT WILL BE USED WITH OUR HP HARDWARE IN THE FUTURE. IT GIVES US A UNIQUE ADVANTAGE IN THE MARKET AND SAVES TIME FOR OUR CUSTOMERS WHO WILL GET THE SOLUTION EVEN FASTER."

Laurent Da Dalto, CEO, MIMBUS



CUSTOMER AT A GLANCE



HARDWARE:

- HP ZBook Create
- HP Reverb G2



APPLICATION:

Develop a proof-of-concept solution targeting HVAC students in continuing education by using HP partner MIMBUS' VULCAN platform with HP ZBook Create and the HP Reverb G2.

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Lane Freeman, Ed.D., Department Chair, Digital Teaching and Learning

He was able to reduce an initial set-up time of seven minutes to less than four minutes.

“He was having fun; he did the entire session,” Dr. Freeman says. “And that was just amazing to watch. At that point, once he was trained is when I started to visualize what this would look like.”

Dr. Freeman also tested the collaborative aspect of the training solution, where teachers can be present as students train within the VULCAN platform. He views the ability to do so as a boon for an instructor.

Plans for the future

Currently, the college has two HP Reverb G2 headsets and HP ZBook Create workstations on hand. Though the pandemic has delayed its rollout, the college hopes to let learners engage with the VULCAN system once things return to normal. If successful, Dr. Freeman envisions a time when students will have access to 15 to 20 machines to complete hands-on virtual training.

“I’m trying to think of the person who’s working full time and unable to come to class every single day,” he says. “This is who I’m really targeting—they can work on this machine at night, or they can work on the weekends. And then at some point, maybe three or four times during the semester, they come back to campus and get in front of the machine and in front of an instructor. So, when

they see the similar part in real life, they know what they need to do. They know where it needs to go, and in what order and sequence it needs to come off.”

Nash Community College works closely with high school students as well, where the VULCAN system holds great promise. When students return to schools in the fall, Dr. Freeman would like to take the MIMBUS technology to classrooms. If high-school students experiment with it, he believes it could help generate interest in additional vocations and potential community partnerships.

“What I like about MIMBUS is that with this platform, the instructor doesn’t have to do anything,” he says. “All of the data just populates—how many times they attempted it, how many times they went through it.”

The proof-of-concept model within the HVAC continuing education course is expected to pave a path for the future. The proof-of-concept will be deemed a success when instructors buy into it and see value, Dr. Freeman says. It could also open up further applications in other courses such as electrical engineering.

“Virtual reality in general is going to be huge in education,” Dr. Freeman says. “Being able to train people without putting them on a job site is definitely going to be the next step.”

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