



## NURSING SCHOOL PIONEERS IMMERSIVE EDUCATION WITH VIRTUAL REALITY SOLUTION FROM ENDUVO AND HP

Concordia University, a liberal arts university serving 5,500 students in more than 20 fields of study, uses HP EliteDesk Workstations and Enduvo software to educate and empower students through virtual reality.



## VIRTUAL REALITY DELIVERS IMMERSIVE EXPERIENTIAL LEARNING

For a nursing student whose future career will touch the lives of countless patients and their families, it's one thing to plod through information in a dry textbook and quite another to snap on a virtual reality (VR) headset and take a 3D tour inside your own body. VR represents the state of the art in education by using immersive, simulated environments to mimic real-life scenarios.

Concordia University of Portland, Ore., is pioneering VR in nursing education with Enduvo's content authoring and distribution software, HP EliteDesk 800 Workstation Edition Desktop with powerful Intel® Core™ processors, and HTC Vive Virtual Reality System headsets to bring content to life in ways that foster deep learning and information retention.





**INDUSTRY:**  
Education



**OBJECTIVE:**  
Train highly qualified nurses who can think critically to improve hospital and patient outcomes



**APPROACH:**  
Leverage virtual reality to deliver an immersive experiential learning environment that deepens and accelerates learning by mimicking real world situations

### New program accelerates nursing education

Founded in 1905, Concordia University-Portland is a private, nonprofit Lutheran liberal arts university serving approximately 5,500 students in more than 20 fields of study. For many years, Concordia has admitted 40 students annually into its traditional, campus-based four-year BA degree in nursing. Two years ago, in partnership with Orbis Education, Concordia also launched an Accelerated Bachelor of Science in Nursing (ABSN) program combining online coursework, onsite simulation lab instruction, and in-hospital clinical rotations.

ABSN students graduate in as few as 16 months prepared to sit for their licensure exam.

ABSN education isn't just fast; it's also designed to empower students through experiential learning. Virtual reality supports this educational mission while helping Concordia meet its business goals. The university admits 72 students three times a year to its ABSN program and needs to scale capacity to accommodate this growth. At the same time, Concordia competes with more than a dozen other Portland nursing schools, distinguishing itself through quality and innovation to attract the best students.

"I understand we are the first school of nursing in Oregon to use virtual reality in this way, so it's a huge differentiator for us," says Mary Oakes, assistant professor of nursing, and head of the simulation and skills lab at Concordia University's School of Nursing, College of Health & Human Services. "It's a better way to learn than reading chapter after chapter in a dry book."

Long involved with simulation and nursing informatics, Oakes is a member of the Concordia School of Nursing simulation and clinical skills lab. In that role, she collaborates with Orbis Education, whose hybrid learning model turns a university's existing curriculum into an online format and helps students gain clinical placements with Orbis healthcare partners. Oakes was speaking with her Orbis contact one day about her ideas for leveraging virtual reality. The contact put her in touch with a colleague at Intel, who in turn reached out to Enduvo and HP. The teamwork of all these innovators created a groundbreaking solution for Concordia.

### Testing the virtual waters

"Concordia had heard about the potential of virtual reality to enhance education, and wanted to try



**"I SEE THE COMBINATION OF ENDUVO SOFTWARE, HTC VIVE HEADSETS, AND HP ELITEDESK HARDWARE AS A WIN FOR ALL. WE CAN ATTRACT THE BEST STUDENTS AND ENHANCE THEIR EDUCATION, CREATING BETTER OUTCOMES FOR PATIENTS AND HOSPITALS."**

Mary Oakes, Assistant Professor of Nursing, Head of Simulation and Skills Lab, Concordia University



#### IT MATTERS:

Provide students with personal, immersive 3D educational experience

Enable teachers to easily create and share virtual reality content

Avoid software developer, graphic designer, studio time costs

Leverage technology to competitively differentiate nursing program

#### BUSINESS MATTERS:

Maintain 100% student nursing licensure exam pass rate

Increase student engagement with coursework

Empower students to think critically

Enable teachers to deliver content in highly effective modalities

#### ABOUT ENDUVO:



Enduvo is a powerfully simple, immersive, content authoring and delivery solution that removes the complexity, inflexibility, and high cost associated with creating augmented and virtual reality content. With Enduvo's market-leading software and distribution platform, anyone can create and share AR/VR content in minutes, without any technical training, and at a fraction of the cost. With immersive content, learners are more engaged, retain more information in less time, and are better prepared for the work they do. Enduvo started with technology from the University of Illinois. It has an exclusive license on the technology for use across any industry.

To find out more about how to use Enduvo at your organization visit [www.enduvo.com](http://www.enduvo.com).

it out," recalls Joe Tieu, chief product officer of Enduvo. "We wanted to show them how easy it is for people with no IT expertise to create powerful VR content that delivers a highly effective immersive educational experience."

Created by doctors to teach future healthcare practitioners, Enduvo is an asynchronous learning format that enables educators to bring their teaching materials and models into a virtual environment, and then record themselves delivering lectures and problem-solving prompts. Cost-effective and easy to use, the platform eliminates the need for software developers, graphic designers, studio time, and specialized equipment typically associated with creating immersive content.

Enduvo visited Concordia with a full solution setup including the Enduvo Learning Platform, an HTC Vive VR headset, and an HP EliteDesk 880 Tower PC equipped with an Intel Core i7-770 processor and 16.0 GB RAM. Featuring enterprise-

class productivity, the HP EliteDesk is part of a portfolio of products that can not only drive interactive and immersive VR experiences, but also do so on an HP commercial platform that offers industry-leading reliability, security, and manageability.

Deeply committed to educational innovation, Oakes volunteered to be the first Concordia teacher to create VR content—and tackled an upcoming module on the 12 cranial nerves. The first challenge was to find a good digital model illustrating the nerves—which Enduvo pulled readily from its library of digital assets and loaded onto the platform.

"When they showed me the model, where I could walk inside a man's body and actually look up at those little olfactory nerves from the very bottom of the cerebrum hanging like little chandeliers, I thought, 'Wow,'" Oakes says. "I've been a nurse for 35 years. But I'd never seen anything like that. When you talk about

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Joe Tieu, Chief Product Officer, Enduvo



## CUSTOMER AT A GLANCE



CONCORDIA  
UNIVERSITY

—PORTLAND, OREGON—



### HARDWARE:

- HP EliteDesk Workstation Edition Desktop
  - Intel® Core™ i7 processor 770
- HTC Vive Virtual Reality System



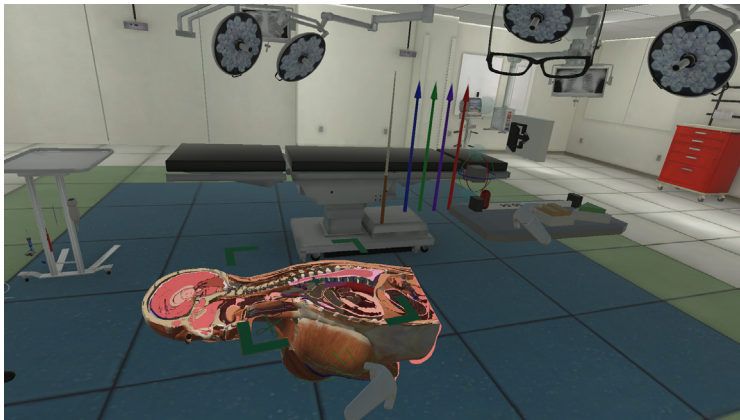
### APPLICATION:

Virtual Reality course content for online nursing school program, used in conjunction with the Orbis Solution



### SOFTWARE:

Enduvo content authoring studio and distribution platform



somebody with a head injury, for example, you can understand the impact a bleeding brain would have on that third cranial nerve.”

Within hours, Oakes created a VR lesson that included discussion points prompting students to think critically: What do you think the clinical manifestations would be of a head injury? How might a disease progression unfold? Students feel as if they are having a one-on-one, real-world 3D experience, including task-based assessments. Oakes is delighted when she sees understanding dawn on their faces. “Students have grabbed me by the shoulders to say, ‘I get it! It makes sense! That’s the coolest thing!’ You’ve touched somebody’s life. That’s what’s so fun about education.”

“Educational theory talks about the importance of experiential learning—learning by pictures and stories, not just by reading words,” Oakes adds. “It is my experience most nurses are visual learners. The more we can provide those visuals, the better educational outcomes and student satisfaction we’ll have. I want nurses who can think through why they are doing something, and whether it’s safe.”

### Better outcomes for hospitals and patients

Concordia pursues concrete metrics of success. The school aims to maintain its 100% pass rate—achieved with the inaugural graduating class—on the National Council Licensure Examination for Registered Nurses, the final step toward earning registered nurse licensure. It values high rates of student satisfaction, as well as employer satisfaction with the Concordia graduates they hire.

Oakes has a vision for the future of VR at Concordia. Right now, the tool is available to students in the simulation lab on campus. She’d like to see it become available through mobile headsets, so students can access VR content from home or in their communities.

“Enduvo, running on the HP platform, empowers us to deliver educational content in new ways our students can absorb faster and better,” Oakes says. “Our highly trained nurses then can go out into the world to enhance patient outcomes and satisfaction, and increase revenue for the hospitals that hire them. I see it as a win all the way.”

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