



Dow Jones Reprints: This copy is for your personal, non-commercial use only. To order presentation-ready copies for distribution to your colleagues, clients or customers, use the Order Reprints tool at the bottom of any article or visit www.djreprints.com

See a sample reprint in PDF format.

Order a reprint of this article now

THE WALL STREET JOURNAL

WSJ.com

JOURNAL REPORTS | June 7, 2013, 11:31 a.m. ET

It's Not a Job, It's a Game

Chemical firms need plant operators. One way to draw new talent: put the work into video simulators.

By DEBORAH GAGE

Can the World of Warcraft get you ready for the World of Workcraft?

That's what the U.S. Department of Energy and several universities are trying to find out. They're backing an effort that tries to train videogame-savvy college students about operating chemical plants—by letting them play videogames that simulate the job.

Coming in Tuesday's Journal

Unleashing Innovation: Manufacturing



Ryan Etter

Big Ideas: Manufacturing's New Industrial Revolution

Off the Grid: What Jay Leno's garage can tell us

Small Chance: How technology is democratizing manufacturing

The goal is to lure bright young people into the manufacturing industry—which is already short of skilled workers and is bracing for a wave of baby-boomer retirements. The factories of the future, manufacturers say, will need an educated labor force that can think quickly, collaborate with others and understand math, engineering and computers.

Nuts and Bolts

The Avestar project—for Advanced Virtual Energy Simulation Training and Research—is now being tested at West Virginia University, and the backers hope to bring it to other schools. Students put on glasses to see images on their screens in 3-D, and they maneuver through the virtual chemical plant using a game pad—something like the controller for a gaming console— to get a feel for how everything works.



Invensys Inc.

Simulators that put users in charge of virtual plants may appeal to college students raised on videogames.

Wesley Vassar, a recent chemical-engineering graduate, says his favorite part of the simulation was being able to peel the sides off large pieces of equipment—such as a reactor or a separation vessel—and see what was going on inside the machines.

"It's very difficult, if not impossible, to experience that in real life," says the 22-year-old, who has a job lined up at the Chlor Alkali division of [Olin Corp.](http://www.olin.com) in St. Gabriel, La.

Another simulation lets students take charge of the entire plant—in a way they'd never be able to do in the

real world, where just pushing the wrong button could cost someone's life. Students sit in a virtual control room and see what happens when they change variables, like closing a steam valve.

They can also practice responding to emergencies: The software can simulate a disaster and have them react, and it can record and play back their reactions.

Comfort Level

Simulators don't replace visits to a real plant, but they do feel comfortable for a generation of students who are less likely to have grown up watching their parents fix things around the house and so lack some of their elders' practical skills, according to Richard Turton, a professor of chemical engineering at West Virginia University.

Dr. Turton says he has to remind students when they use the simulators that they're preparing for more than a game. One action inside a plant can affect hundreds of pieces of equipment—closing a leaking steam valve because it's noisy and annoying, for instance, could cause a reactor that the steam feeds into to explode.

"You need to go deeper and you need to understand the process before you make that snap judgment," he says.

Ms. Gage is a staff reporter for Dow Jones VentureWire and WSJ.com in San Francisco. She can be reached at deborah.gage@dowjones.com.

A version of this article appeared June 11, 2013, on page R3 in the U.S. edition of The Wall Street Journal, with the headline: It's Not a Job, It's a Game.

Copyright 2012 Dow Jones & Company, Inc. All Rights Reserved

This copy is for your personal, non-commercial use only. Distribution and use of this material are governed by our [Subscriber Agreement](#) and by copyright law. For non-personal use or to order multiple copies, please contact Dow Jones Reprints at 1-800-843-0008 or visit www.djreprints.com