

From virtual reality to drones and robots

County schools equipping students with latest tech

By Anna Bolton
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GREENE COUNTY — Greene County schools are working to give their students the best technology in the classroom in 2019 and beyond.

Many schools in the district have already implemented a 1-to-1 program, giving each student a laptop or tablet to use for schoolwork.

At the Greene County Career Center (GCCC), technology transcends computers.

"While we went to the 1-to-1 model last year and all of our students have laptops, technology in various forms is used daily in virtually every career-technical program," Ron Bolender, public information administrator, said. "An advantage we have in career-tech is that students can go from a simulator straight to real hands-on learning, sometimes immediately. Simulators are great for learning basic skills while reducing supply costs."

One simulator allows Welding and Metal Fabrication students to learn skills without the safety hazards or use of supplies. Students in the Health Science Academy use the Nursing Anne Simulator to practice

patient care procedures, identify anatomical landmarks and evaluate patient consciousness. And in the Natural Resource Technology program, students create designs that replicate homes and businesses with a 3-D landscape software.

Through GCCC satellite programs, Beaver Creek, Xenia and Yellow Springs students have access to 3D printers and scanners, laser engravers and CNC machines and routers for courses covering automation, robotics and app design to flight and space curriculum.

Even more virtual and augmented reality technologies will be in place in the new GCCC facility, which is supposed to open for the 2020 school year at its new site near the US Route 68 and US Route 35 bypass.

New programs on campus will focus on advanced materials engineering, robotics automation, Unmanned Aerial Systems (UAS) and Geographic Information System (GIS) mapping, as well as cyber security, according to Curriculum Supervisor Brett Doudican. He's tasked with outfitting the new facility with the latest technology.

Doudican said students

will use some of the most advanced manufacturing tools — laser engravers, CNC routers, 3D printers and more for computer-aided design work. In robotics, students will learn with traditional pick and place robots, collaborative robots and robots with vision sensors.

"Sensors and vision is a big safety component when humans are working alongside robots. To ensure nobody is getting hurt, it identifies there's a human, slows down and stops," Doudican explained.

The UAS or drone program will include a flight simulator component in which students will earn certifications to fly drones commercially. They'll also learn to build and fix drones.

"There's no adequate workforce to fix these," Doudican said, stating that the industry is growing.

"We try to get students the latest and greatest technology so that they can transition from high school to the workforce or college or whatever their next step is — and be employable, not need training or re-training once they're hired," he said.



Photo courtesy GCCC
Greene County Career Center senior Ladan Licklider, of Xenia, works on the Miller LiveArc simulator in the welding and metal fabrication program.

Through recent Ohio Department of Education funding, Wright State University (WSU) will also use virtual reality equipment as teaching and training tools.

"With this money we're buying one of those full-scale, walkable displays," said Thomas Wischgoll, professor of computer science and engineering and director

of the Advanced Visual Data Analysis group. "It tracks where you are and recreates your perspective so it feels like you are really going through that world."

With the new equipment, students might be able to see the inside of an automobile or human body without disassembling the vehicle or operating on a patient.

It'll also help prepare students for post-graduation jobs.

"(WSU's) proposed cyber-enabled interactive and virtual reality training program will give the new generation of workers the requisite experience that (our company) seeks — the experience in remotely specifying the machine control parameters and producing parts," said Anil Chaudhary, president of Applied Optimization in Fairborn.

Researchers at WSU also received a grant to develop a pilotless "Air Uber" drone to be used in disaster relief or surveillance. Yong Pei, associate professor of computer science and engineering, is leading the development of computer software to enable the drone to detect and avoid other aircraft in the skies.

"Computer science and computer engineering are taking a leading role in the transportation/aviation industry," Pei said. "People want to shift more responsibility to the machines, the computers. Computer science is right in the center. That's the most important part."

GCCC and WSU are just two examples of county schools providing their students with state-of-the-art technologies.

Robots on the move at Soin Medical Center

By Scott Halasz
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BEAVERCREEK — Robots have taken over Soin Medical Center.

But there's no need to worry that Armageddon is coming. The four robots seen rolling through the halls are actually hospital employees, so to speak as Kettering Health Network made the investment to aid in materials distribution, freeing up employees for other tasks.

Working in shifts of two, Tom and Jerry (they don't chase each other) and Ollie and Eve can push carts that weigh as much as 300 pounds around the building with little effort. And they do it with very little human interaction.

"It allows our employees to be able to function on other items that are so important," hospital President Rick Dodds said. "It really has made a great difference."

Once a cart is loaded in the materials area, it is rolled onto one of the robots' flatbed. With the press of a couple buttons on a nearby screen, the robot lifts the cart off the floor and is on its way to the destination. It can sense where walls are, where people are and can also call for an elevator all by itself, according to materials manager Richard Schillhahn.

Once inside the elevator, it will turn itself around to avoid



Photos by Scott Halasz | Greene County News
Soin Materials Manager Richard Schillhahn programs the Eve to move supplies to the emergency department. Soin has four robots that distribute materials throughout the hospital.

having to back out.

There is a camera on each to make sure all is well and once it reaches its destination, it returns to the home base after

the person unloading it presses one button.

"It's amazing," Dodds said.

The age of robotics has also enhanced the surgery floor.



Eve and the other three robots can call for an elevator without pressing a button.

Four Soin doctors are master surgeons and have helped the medical center become a center of excellence in robotic surgery, Dodds said.

Dr. Brian Ondulick is a general surgeon specializing in complex hernia repair along with Dr. Chris Schreider. Dr. Ananth Annamaraju is a urology specialist and Dr. Steve Crawford can perform minimally invasive gynecological procedures.

"We're doing single-site hysterectomies," Dodds said.

By going through the naval, there is a quicker recovery and it's scarless. Soin is the only hospital in the Dayton area to do this, Dodds said.

The doctors have had more

than 1,000 cases in three years.

That's not all going on. Soin is in the midst of constructing a new patient care tower, set to be completed June 2020.

It will have additional operating rooms and patient beds.

"Our facility has grown really quickly," Dodds said. "We reached capacity much quicker than what we thought."

The hospital will also add 17 ICU beds.

"We're always focusing on quality and patient satisfaction," Dodds said.

Soin and Greene Memorial Hospital were the first in the area to go live on a network command center which keeps various departments connected, improving patient care.

Housekeepers carry iPods and are notified when a room is ready to be cleaned and prepped for the next patient. Patients have special wrist bands that interact with strategically placed beacons that can allow hospital staff to see where the patient is in the system at any given time in an effort to provide that patient with the most appropriate level of care, according to Dodds.

Staff will also know where the patient is physically, whether it's radiology, recovery, etc.

"We can track them along the way," Dodds said.

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Dragon's Guildhall Games & More reaches half-year mark

Dragon's Guildhall Games & More has been in business now for more than a half year.

Since its grand opening last September, Dragon's Guildhall has been growing its gaming community. Within the Wizards of the Coast Play Network, Dragon's Guildhall is now a Core Level store and hosts Friday Night Magic, Sunday Afternoon Com-

mander, and Friday/Saturday evening Dungeons & Dragons Adventures Leagues.

The Pathfinder Society is running tables at Dragon's Guildhall the first and third Thursday each month. Saturday afternoons are often times for workshops for painting miniatures (either Warhammer or RPG minis), building/

painting terrain, or working with Worbla for cosplay projects. Board game demos are available Monday evenings and sometimes other days — look for promos and discounts. Magic Mud Ceramics hosts a Paint & Take Ceramics workshop the last Monday evening of each month.

Dragon's Guildhall has a few side rooms for

excellent small-group gaming (up to eight people), as well as larger game space and larger tables (four feet by eight feet) for tabletop miniature wargames (historic miniatures; Warhammer and other games workshop games; Star Wars X-Wing, Legion, etc.; Star Trek Attack Wing; etc.). Our collection of merchandise has more than

doubled since the store first opened, with emphasis placed on increasing the selection of the best selling board games, dice, collectible cards, miniatures, and role-playing game merchandise. Along with the increased number of board games for sale, the number of demo board games available to play in the store has quadrupled.

Dragon's Guildhall has hosted a number of parties since it opened and a major tournament (Blood Bowl Ogre-hio Open). Numerous small groups have booked our rooms for RPG games, board game nights, and meetings.

So, come in and join our gaming community. We look forward to seeing you.