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Teen driving: Can computers teach us to drive?

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By KEVIN A. WILSON



Can technology help us do a better job of training novice drivers? Note the term "novice," which is coming to replace "teen" as the focus of national concern about inexperienced drivers. This stems in part from graduated driver licensing (GDL) laws that have pushed up the age of new drivers and is partially a reflection of recent studies showing that it's not just newly licensed drivers, but all inexperienced drivers younger than 25 who are at higher risk of death or injury in car crashes.

"Technology is just a part of their lives," says William Van Tassel, head of training for the AAA Foundation for Traffic Safety. "They've grown up with the Internet and cable and video games and phones, so they take that with them when they start driving."

Most headlines about the mix of technology and young drivers are negative, because of the concentration on issues such as the use of phones or texting while driving. But Van Tassel points out that technology also is proliferating in driver education, training and monitoring.

"We don't have a lot of data yet on any of these," he notes. "We don't know if advanced driving simulators can improve education for teen drivers. They're being used more widely to train professional drivers in emergency response police, fire and ambulance, military and the transportation sector. The cost has come down some, but they're still pretty expensive for your normal driving schools to take on."

Similarly, there are in-car "black boxes" that monitor a young driver's behind-the-wheel behavior and report back to parents. Some offer electronic coaching, sounding an alert if the driver exceeds speed limits or preset limits for acceleration, braking or cornering g-forces as measured by accelerometers. We reported on one such system, Inthin's TiWi, in last year's Back to School section ("Coach in a Box," www.autoweek.com/article/20080911/FREE/809049961). Others mount a webcam in the car to record or transmit live the driver's activity.

"These monitoring and coaching systems vary widely, from simply using the GPS built into a cell phone to those that measure a lot of parameters and report continuously in real time. How effective they are, we don't know. There's lots of anecdotal evidence but very little solid research," Van Tassel says. "One question that would be good to answer is whether these systems encourage parental involvement. That would be good, but we don't know if, perhaps, parents become less involved on a personal level and come to rely on the technology to do the job of overseeing the young driver instead. That wouldn't be so good."

He also notes a rise in the number of driver's-ed offerings in which the textbook-and-lecture model is replaced or supplemented by software, either online or via a program installed on the user's computer. Some of these software offerings might be compared to "educational" comic books distributed to the parents and grandparents

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of today's students.

AAA offers one of the better products in its Driver-ZED computer program, which some driving schools incorporate into their curricula. "We've seen some schools that have come to specialize in just offering the on-road portion of the instruction required under GDL while the students do the classroom portion online. This is more popular in the rural states, where parents may complain that it's inconvenient to travel long distances to a classroom," Van Tassel says. "Again, we're short on data; some of the preliminary information suggests the online courses are less effective."

Novices have access to lots of information about driving. The bigger challenge for them is simple inexperience. "There's no substitute for behind-the-wheel time," says Maria Wojtczak, cofounder and COO of DrivingMBA, an Arizona driving school. "Our state GDL law only requires 30 hours before they go for the exam, but I tell parents of teens in our program to go for 120 hours, minimum."

But don't count DrivingMBA among the many hands-on driving schools that denigrate simulator use. In fact, the program was started in 2003 as a simulator-based addition to standard driver education.

"We thought of ourselves as a supplement to the traditional programs," Wojtczak explains of the school's founding in the wake of a rash of teen-driver fatalities in the Scottsdale school district.

"My husband, Richard, was previously an IT professional in the automotive arena, and I had a career in training and coaching, so it was natural to start with simulator-based learning. We thought we'd build it and they would come. But we soon found out different--we became a certified school for the state licensing program because we discovered most parents will go for convenience before they go for safety."

Parents were less likely to pursue better training for their teens if it didn't also move them toward licensing requirements. Today, DrivingMBA's program uses two levels of simulation, one for learning the basics of maneuvering a car and one for advanced training. The units are Raydon's VDI (Virtual Driver Interactive) simulators profiled in *AW* two years ago ("Virtual Reality Check," www.autoweek.com/article/20070829/FREE/70822014).

"We will not take a student on-road without doing simulator first," Wojtczak says. "The roads are too crowded and dangerous for a complete newcomer."

Started in Scottsdale and expanded to Chandler, Ariz., with a full program of simulator, on-road, classroom, software and evasive-maneuver training in 2007, DrivingMBA now partners with the acclaimed Bob Bondurant School of High Performance Driving with a top-level offering called the Elite Driver Training Program. Despite it being the most costly of the school's offerings, Wojtczak says enrollment has been strong, with the exception of a slight downturn last fall.

"The guys from Bondurant have been through our program, and they understand the use of simulators and the advantages they give us. [At Bondurant], they can teach a lane change or skid control. But with the simulators, I can do things they can't. For instance, I can put [a student] on a freeway on-ramp, get them up to 70 mph and then have the car in front of them come to a full stop. That causes crashes on the road all the time. You can't really practice for it without endangering people, except on a simulator."

AAA's Van Tassel says he is impressed. "We visited DrivingMBA, and it was one of the first schools we put on our new system of approved driving schools. They're doing it all and integrating the aspects well."

Wojtczak says she's glad that the school expanded its scope beyond the original plan. Instructors are involved in national driver-training organizations (a representative attended *AutoWeek's* 2007 Teen Driving Safety Summit) and hear the criticisms from many in the field.

"Oh, they say the simulator is no good because you need to feel the g-forces. I would never argue that simulator training replaces actual driving practice. The simulator is a tool, and like all tools, you have to use it appropriately. That's why we've integrated it into a full program ourselves, so that it all fits together," she says.

Van Tassel says he sees promise for simulators as the technology improves and costs come down.

"You know, right now, the software simulations for games are often far more accurate and sophisticated than what's available for training. But that's starting to change, I would say primarily because of the interest from rapid-response and fleet operators," he says.

"You know, one traffic accident can cost a company on average \$25,000, so the cost of a simulator starts looking pretty reasonable."

Interest in recreational simulators also is pushing the technology. Perhaps the most advanced racing-simulation software is that of Boston-based iRacing, where Steve Potter, director of communications, says one of the firm's long-term goals is novice-driver training.

One iRacing partner is Simcraft, maker of the Apex line of full-motion simulators. These sell for \$15,000 to \$45,000. Simcraft has been contracted to develop training projects for the U.S. military. Combine the sophisticated simulation at iRacing with a Simcraft unit--a combo now in use for training race drivers--and you can envision driver's-ed simulators that offer g-force sensations. Driving schools could be attracted at a cost that could reduce what they now spend to buy and maintain a fleet of cars.

"Long before we opened our doors to the public, Dave Kaemmer, the company's cofounder and both its CEO and

CTO, expressed keen interest in eventually doing ultra-realistic training for novice street drivers," says Potter. "I'm afraid that at this point, 'eventually' doesn't represent anything like a fixed point on the calendar."

Potter, who has been a public-relations representative for motorsports teams and the general manger of the Lime Rock Park racetrack, opines that "the sort of highly realistic simulations that we do could go a long way toward reducing the toll of young drivers by letting them go through the process of learning from their mistakes in the virtual world rather than in the physical one, where there is no reset button."



An Apex full-motion simulator by Simcraft. The company is a partner of iRacing, which makes advanced racing-simulation software.

+ZOOM A picture of orange and black driving simulator

Teen fatalities in cars

- 2007:** 4,946
- 2006:** 5,159
- 2005:** 5,300
- 2004:** 5,645
- 2003:** 5,718
- 2002:** 5,954

2001: 5,594

2000: 5,685

(Teen motor-vehicle deaths were 14 percent of all motor-vehicle deaths in 2007, according to the Insurance Institute for Highway Safety.)

Leading causes of death among teens in 2005, according to the IIHS:

Motor vehicles: 5,253

Homicide: 2,219

Suicide: 1,809

Cancer: 981

Motor-vehicle deaths by age in 2007

13: 102

14: 166

15: 268

16: 615

17: 865

18: 1,104

19: 1,029

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Richard Wojtczak wrote:

DrivingMBA does not use Raydon simulators; the driving fundamentals course uses SSI simulators, while the advanced training is performed on the L3 Patrolsim IV simulators, which are the same units used by police, fire, and the heavy trucking industry.

9/3/2009 11:23 AM EDT

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civicsi wrote:

With all our technology we MUST teach and encourage all drivers especially teens to deal with everyone as they would like to be dealt with. Technology is NOT OUR SAVIOR. It(technology) is a wonderful thing but not the answer to the problems of teen deaths or any other problem. Most of the issues would be solved if parents, teachers and those teens look up to would demonstrate that being responsible for our selves, our actions and treating others with the kindness we desire for ourselves is the answer NOT more driver training or technological advances.

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