Virtual-reality football taking the field with NFL and college players



Trent Edwards, co-founder of STRIVR Labs, demonstrates the STRIVR virtual-reality football training system at the STRIVR Labs office in Menlo Park, California, June 19, 2015. Photo: LiPo Ching/Bay Area News Group/TNS

STANFORD, Calif. — Trent Edwards, who played quarterback for Stanford University 10 years ago, is back in the game. Or so it seems. He is actually standing on the stage of a college lecture hall, showing an audience of leading high-tech sports minds the future of football.

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Edwards is wearing a virtual-reality headset and everything he sees through his goggles is projected onto a big screen. A wave of “whoas” and “no ways” spread through the crowd as the quarterback turns to his right and to his left. Surprisingly, it looks and sounds as if Edwards is in the middle of a live Stanford football practice.

The quarterback scans the players. He pauses as the tight end goes in motion and swivels behind to see a running back lined up in the backfield.

Something shakes in Edwards' voice, and he is a college passer again.

“I’m feeling it right now,” he says. “I’m feeling the juices.”

Edwards gets so involved in this alternate universe that he forgets where he is. He takes a step forward and nearly tumbles off the stage.

## Like Being In The Huddle

The virtual-reality football technology born at Stanford could begin revolutionizing football this fall. A number of college and NFL teams, including the San Francisco 49ers and Dallas Cowboys, have already signed contracts to use the whiz-bang product.

For players, especially quarterbacks, using the software is a way to practice complicated plays they otherwise see only on game days. For coaches, it is a way to allow backup players to get experience off the field. For the football community, it is a way to reduce contact — and head injuries — in an era of increased fear over player safety.

## Fewer Injuries In A Virtual Practice

Stanford coach David Shaw said he has been rejecting similar technology for 20 years because every previous version was “terrible, terrible.” They were the quality of video games, rather than 3-D reality, he said.

Then Jeremy Bailenson, a Stanford professor and the world’s leading authority on virtual reality, and a pair of his former players, brought him this breakthrough. Shaw couldn't believe it and even put up the money to help start the company. No one actually throws a pass while wearing the headset, but the coach realized this could bring his playbook to life.

It is especially helpful in college, where the number of hours that players can practice the contact sport has been cut back.

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“These guys, by their class schedule, will come by and put the headset on and actually have their own individualized practice," he said. There is less body contact, fewer head injuries and less time on the field.

## The Real Test On Game Day

This idea began with, of all things, a Stanford class. In 2005, Stanford football player Derek Belch took Bailenson’s “Virtual People” class, which explains how the brain works in a virtual environment. The kicker approached the professor after class and said, “Wouldn’t it be great if we could use this to train football players?”

Belch’s continued research in the field led to the creation of STRIVR Labs. (The ST is for Stanford, the VR for virtual reality.) The company uses GoPro cameras strapped to the player, usually the quarterback, to record drills at a 360-degree angle. The programmers stitch together the images for a complete picture.

STRIVR ran a small experiment at Stanford last year. They put three quarterbacks into a virtual environment. The quarterbacks watched a series of plays. Then Belch tested their memory and how quickly they reacted. The quarterbacks used the headsets for a month before they were tested again. Reaction times were down, and recall was way up.

Cardinal's starting quarterback Kevin Hogan ran through plays on the headset before his last three games.

“His decision-making was faster. Everything was quicker,” Shaw said. “He saw things happening and could make those decisions and anticipate the ball coming out of his hands."

Besides giving players a tool for studying plays, STRIVR can program, say, noise or other conditions that might otherwise catch a team unprepared on game days.

## It's Just Like Being There

Heading for a game at Seattle’s CenturyLink Field? Its specific sounds can be recreated in the headset during practices beforehand.

“We can make it dark. We can make it rain. If it exists, we can create it,” said Tracy Hughes, the founder and CEO of Silicon Valley Sports Ventures, and an adviser to STRIVR. “We can pump in crowd noise. We can make it evening. Dusk."

For now, the technology is too expensive for anything but the NFL or major college teams. High schools and youth league teams will have to wait until it becomes cheaper.

Shaw pictures a day soon when virtual reality is a part of every top program.

“In this world, I get to see what my quarterback sees,” he said. “I get to see which way he’s looking. And I don’t have to guess. I actually see which way he turns and can see exactly in his field of view. "That’s huge for us. And that’s going to be huge for our team.”