



culus

Development

DARTMOUTH COLLEGE
FRANCIS



VIRTUAL REPS

Dartmouth quarterback Jack Heneghan could hardly believe it.

You might think that being a college quarterback with an interest in technology and with parents living about 10 minutes from the Stanford campus the sophomore would have heard about the pioneering work being done in Palo Alto over the last year integrating virtual reality into football coaching.

As it turned out, Heneghan knew nothing about the STRIVR system until learning about it where so many others did, surfing the Internet.

He'd learn a lot more about it soon after. Way soon, as they say.

"I was surprised two or three weeks after I first read about it when we brought it here," he said. "After what I'd heard, I was really excited."

So was Bruce Dixon IV, a freshman quarterback for the Big Green, and he wasn't the only one.

"When my mom found out we got it she was really excited," he said after a practice this fall. "She told me whenever I get a chance, be on STRIVR."

Smart woman.

STRIVR is the virtual reality system developed through Stanford by Derek Belch, recruited as a placekicker for the California school when Dartmouth coach Buddy Teevens was the Cardinal coach. It is referred to as an "immersive virtual reality system," meaning that, through use of special goggles and headphones, what the wearer sees and hears makes him feel as if he is standing in the middle of the video he is watching.

"The first time I put it on I wanted to catch the ball," said Dartmouth quarterbacks coach Chris Rorke. "It felt like I was back playing. It really does put you in the play."

If a quarterback wearing the goggles looks to his right he may see a couple of receivers appearing to be just a few yards from him. To his left perhaps his tight end. If he turns his head around he'll see his tailback seemingly close enough to touch.

Most importantly, when he looks in front of him he sees the defense he has to solve.

With the touch of a computer key the video starts up and everyone begins moving at full speed, giving the quarterback a chance to decipher what the defense is doing, and to make decisions based on what he sees developing in front of him.

"It's a great tool for making sure your eyes are focused on where they need to be," said Dixon. "That is really key at quarterback – eye

discipline, knowing immediately where you need to take your eyes, and making reads.

"It helped me improve a whole lot, just in the preseason."

Teevens has noticed, and it hasn't surprised him.

"The big thing is guys like Jack Heneghan and Bruce Dixon having a chance to get in and use it frequently," he said. "It's great to be able to have a backup who doesn't get a whole lot of snaps in practice get the snaps with STRIVR."

Dartmouth entered this season without a seasoned backup, and in Rorke's opinion the new system has made that less of a concern.

"Our young guys were able to come in during preseason and spend a lot of time, particularly in the passing game, using the STRIVR system," he said. "I think there's no question they are further along mentally than they would have been as a result of that."





Joey McIntyre takes Receiver Victor Williams '16 through his paces with the STRIVR system. The technology allows the athlete to fully engage in the play while his coach observes tendencies and instincts.

Starting quarterback Dalyn Williams had the chance to try out the STRIVR system for the first time last spring when Belch and partner Trent Edwards – a former Stanford and NFL quarterback – flew across country to give their old coach a look at an innovative application for the emerging technology.

“I was absolutely amazed when I put the headset on,” said Williams. “Not only was the picture extremely clear, but I was interacting mentally in a virtual world.”

“I was able to take mental reps by reading coverages without being on the field – invaluable to a quarterback.”

As it did with Williams, STRIVR made believers out of the Dallas Cowboys, San Francisco 49ers and Minnesota Vikings, who signed on with STRIVR from the pro ranks, and college football teams representing Stanford, Auburn, Clemson, Arkansas, Vanderbilt and Rice as well as Dartmouth.

The Washington Wizards are bringing the technology to

basketball and the Washington Capitals to the NHL.

Through resources provided by the Friends of Dartmouth Football, the Big Green is not only in an elite club of early adoptees, but it has a contract with STRIVR that gives the school exclusive rights to the cutting-edge technology for two years.

Williams thinks the investment was wise. “(STRIVR) will prove to be worth every penny,” he said. “This tool will speed up the development of players and in my belief, in conjunction with a great training program, could change an ordinary player into an outstanding one. ...”

“I believe that with the addition of STRIVR, practices will be more efficient. Coaches will have the ability to limit or expand practice reps for whomever they deem necessary and the lost reps can be made up via STRIVR.”

Added Williams, a strong candidate for Ivy League offensive player of the year this fall and an NFL hopeful: “For quarterbacks

this tool has no limit. It will teach the correct places to look pre-snap as well as post, how coverages take shape and ultimately where to go with the football. It simply provides players and coaches another avenue to be great.

“Who wants to be average?”

T

he 3-D STRIVR video is created using a Rubik's Cube-sized box with small, synchronized cameras on the different surfaces. When used for quarterback prep it is perched on a tripod set up near the QB to record 7-on-7 plays (those without linemen), usually against a defense running an opponent's scheme.

There are competing systems that rely on animation rather than video of actual players, but according to Belch research has shown that the brain assimilates information better with live action.

The file containing the individual videos is sent electronically

“It's very realistic,” said Heneghan. “It's especially good because you have the experience of doing it on the field and can come back in and reassess where you went wrong if you made a mistake. Or if you got it right it can reinforce the good habits with your eyes.”

In addition to offseason and preseason sessions on the system, STRIVR allows the quarterbacks to get a jump on preparing for their next opponent well before the first practice of game week on Tuesday.

“We have video of different ‘looks’ that we will see from teams that we will be playing,” explained Teevens. “So our QBs on Sunday night, or if it's a home game even on Saturday night, can already start taking a look at the next opponent's pressure package.

“That way, as we start to prepare they will better understand what we are trying to do.”



“
For quarterbacks,
this tool has no limit.”

to the STRIVR offices and returned as a 3-D file. The next day Heneghan or Dixon or Williams might pull on the headset and without leaving Floren Varsity House be dropped “inside” the picture for a few minutes of virtual practice.

As an added bonus, while the quarterback wearing the goggles looks over the defense, Rorke and the other quarterbacks can observe what he's looking at via a monitor or overhead screen.

“We use it in meetings and everybody in the room knows whether or not the person has their eyes in the right place,” said Rorke. “Watching regular video the way we always have, you can't tell 100 percent whether they know where to put their eyes. They may answer a question correctly because they are book smart because they learn by rote, but now it's a reaction thing.

“If their eyes don't go to the right place you know immediately because you are looking where they are looking. It's, ‘You took your eyes off the free safety. You went the wrong direction.’ There's no way around that. That's a reaction thing as opposed to a learned response, so from a training standpoint and a teaching standpoint it really is a whole other level.”

In meetings or on their own the quarterbacks can work their way through reps until they get it right.

But the STRIVR system isn't limited to preparing quarterbacks. Teevens and his assistants continue to think about and try new ways to use it.

They have set the camera up near the center to explore “line” calls. They've tried it at linebacker. They've used it in the kicking game.

Joey McIntyre, who was the moving force in bringing the system to Teevens' attention, is excited about the possibilities of employing STRIVR's capabilities off the field in his role as director of external relations and recruiting/operations. The camera has been used to create a 3-D look at Dartmouth's spacious weight room in Floren Varsity House and to record the wondrous view at Holt's Ledge when the freshmen football players went there on a hike.

With the STRIVR footage the family of a potential recruit in the Pacific Northwest or the Texas Panhandle can see what a quarterback sees on Memorial Field, but also stand in the middle of the Green and marvel at Dartmouth Hall in front of them, then turn to see Baker Tower to their left, and the Hopkins Center when they look right.

“We are thrilled to have STRIVR,” said Teevens. “This is cutting-edge stuff. It will make us a better football team and puts us ahead of the curve.” **DP**