



WARRIORS' INVESTMENT IN TECH: IS THIS THE FUTURE OF YOUTH BASKETBALL TRAINING?

BY DANIEL BROWN, THE ATHLETIC

Steph Curry's likeness still looms large over this sprawling basketball facility in Oakland where the Warriors once trained. His photo is part of a mural on the wall that reminds visitors of all the great players who practiced here, who launched thousands of shots here, who honed a dynasty here.

But because the Warriors moved to San Francisco in 2019, these practice courts themselves were recently renovated to put the focus on something else: the future.

There is now a row of high-tech shooting stations along one wall where sensors track the flight of each shot like an air-traffic control tower. On the opposite wall are individual workout booths that test a player's ball-handling and passing skills with computerized accuracy.

This is equipment from Shoot 360, which aims to revolutionize basketball training with data-driven workouts. This is where analytics are literally put into practice.

Struggling with your shot? Hoist a few jumpers at these workstations and the downloadable screen will break down your field-goal percentage, how many you missed left, how many you missed right, how many were short and the trajectory of every shot. (The proper shot has an arc of 45 degrees, although anything between 43 and 47 is acceptable.)

Struggling with passing? Take aim at an oversized video board and you'll rack up a high score by hitting the moving target but suffer deductions for passes that would wind up as turnovers.

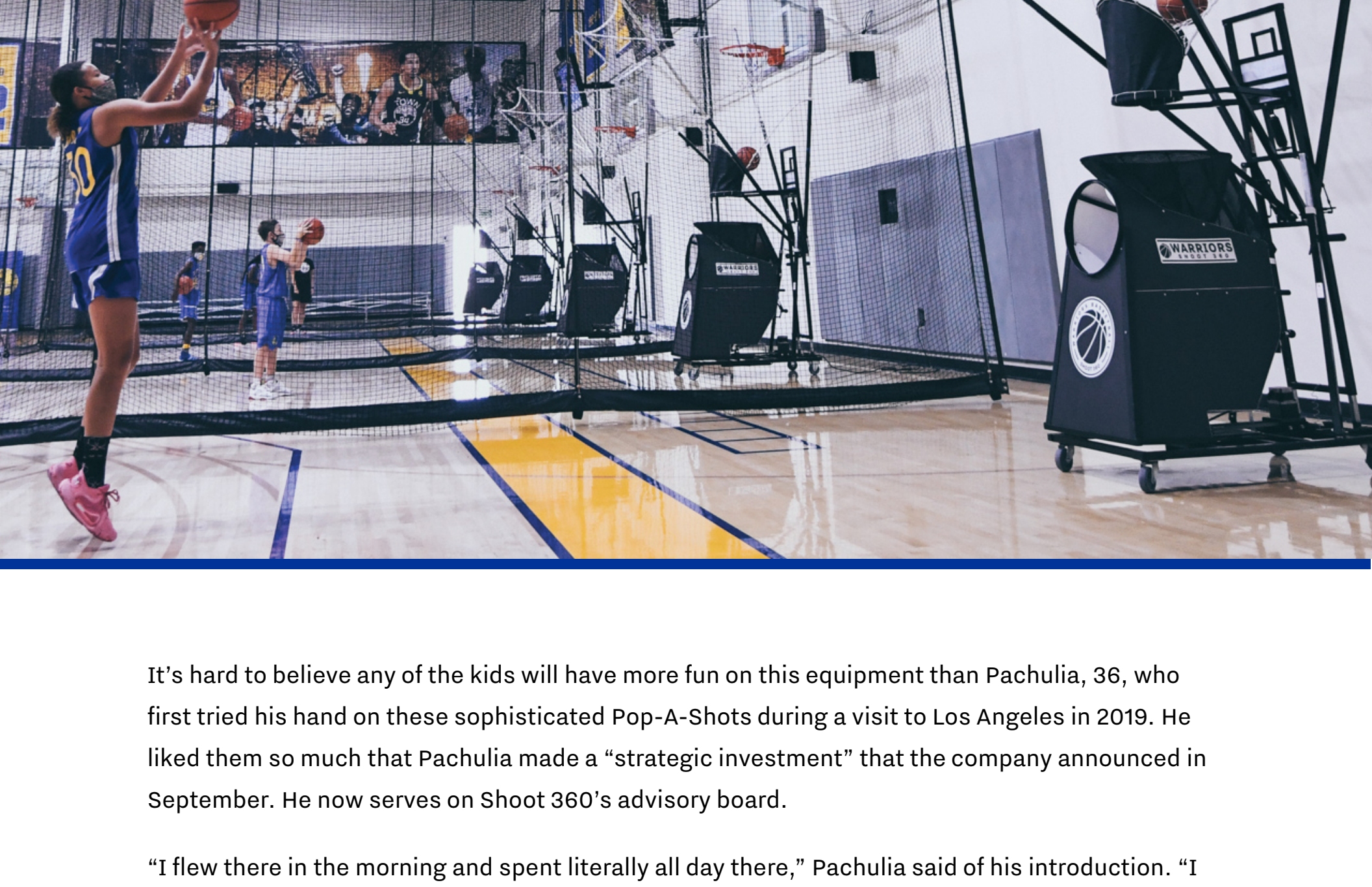
Talk about strength in numbers.

"It's a game-changer" - Zaza Pachulia...

...the former Warriors center and an investor in Shoot 360, said while providing The Athletic with a socially distanced tour last Thursday. "The data and the analytics and the numbers are a huge part of our business, right? So, basically, this provides you the numbers, the quick feedback, and allows efficient repetition for the athletes. It kind of checks all the boxes."

The technology comes from Shoot 360, a Vancouver, Wash.-based startup that now has nine training centers across six states. The Warriors announced last week that the Warriors Basketball Academy will become the first youth program in the NBA to adopt Shoot 360 technology, and they will unveil the equipment when they open their doors here to registered youth players starting Nov. 5, with some pandemic-related limitations.

Students from grades 3 through 12 can register for a free one-hour session at gswacademy.com



It's hard to believe any of the kids will have more fun on this equipment than Pachulia, 36, who first tried his hand on these sophisticated Pop-A-Shots during a visit to Los Angeles in 2019. He liked them so much that Pachulia made a "strategic investment" that the company announced in September. He now serves on Shoot 360's advisory board.

"I flew there in the morning and spent literally all day there," Pachulia said of his introduction. "I experienced it myself, I put shots up, I was doing a lot of dribbling and passing in front of the screen and in cages. ... I just love it. I wish I was a kid still playing basketball."

Pachulia left the facility and promptly called Steve Kerr, the Warriors' analytics-embracing coach, on his drive home. Pachulia hasn't stopped evangelizing since. Nick U'ren, the Warriors director of basketball operations, did the same thing after visiting the LA site, phoning Kerr immediately after trying the equipment for the first time.

"That made us feel like, 'Hey, we're taking the right steps here,'" said Jeff Addiego, the Warriors' senior director of youth basketball.

The Warriors, at the NBA level, haven't incorporated the technology into their own workouts yet. Ky Bowman tried out the equipment Monday; Curry is tentatively scheduled to check it out next week.

But Addiego said Thursday that the franchise's G League Ignite team, coached by Brian Shaw, works out on the Shoot 360 cages installed at the Ultimate Fieldhouse in Walnut Creek.

"It's part of their training day, and these are elite-level top NBA prospects for next year doing that," Addiego said.

Mostly, though, the Warriors are focused on the next generation. Addiego, now in his 20th year of running youth camps, said when players begin coming in next week, his staff will have the ideal teaching avenues for a modern audience.

Addiego said coaches here try to avoid the inescapable phrase — "like a video game" — but...

...the Shoot 360 shooting and ball-handling stations certainly offer something more alluring to modern kids than a hoop in the driveway.

"We're all addicted to our phones — kids even more than we are," Addiego said. "And so I think it's useful for us to find a way to use technology to get them addicted to working on their games, get them addicted to being active and being physical.

"Those numbers (on the screen) may be pushing a button inside their head to say, 'Hey, I want to get back there tomorrow. I want to see if I can shoot better than 46 percent.'

"I think that's a key component to thinking, 'Hey, the more I get in here, the higher my numbers will be.'"

The row of new shooting cages at the Warriors Academy facility has an arcade feel. First, a shooter picks a program — perhaps a customized session with 50 shots from the top of the key, 50 from the left baseline, 50 from the right elbow, etc.

Demonstrating on this day was camp coach Jose Rivera, a former De La Salle High sharp-shooter who made 43 percent of his 3-pointers as a senior at Cal State San Marcos (in North San Diego) in 2012-13.

Rivera launched 10 shots from the top of the key. After each one, a soft robotic voice announced something like, "Forty-five ... forty-six ... forty-one." That was his shot arc, as detected from a high-speed camera that measures the trajectory in real-time.

The audible announcement allows the player to make mid-session adjustments if the shots are coming in too far off from the 45-degree target range. The voice function spares shooters from having to take their eyes off the rim.

"The arc is the toughest part to teach," Pachulia said while watching Rivera's session. "It's very easy to distinguish depth, for example: Is it short or long? I mean, anybody can see that. Or left or right. But arc is something where the more you shoot, the better you're going to get at it. You're going to have a feel of it's too high or too low."

When Rivera finished, he walked over to the computer monitor embedded near the hoop and read his full report:

He made 7 of 10, missing two right and one left. The graphic even showed precisely where the he made shots through the hoop. The perfect shot is one that lands 11 inches beyond the front of the rim.

If he were a youth camper, this report — whether he'd taken five shots or 5,000 — would be downloaded to the Shoot 360 app on his phone.

"So, if I'm a kid, and I get home from practice and mom and dad say, 'How'd you shoot?' or 'What did you work on?' I can say, 'Look!'" Rivera said. "You can kind of compare and say, 'Well, my depth was all messed up yesterday and I was shooting everything short and was in the zone 50 percent of the time. Today, it was 60 percent.'

"You can really start to study, 'How can I fix my shot? What's going on with it?'"

There are more specific guided workouts, with titles like "shot fake side step" or "staggered jab series" or "opposite elbow behind the back series."

Coaches here say the readouts give them a diagnostic tool for teaching better techniques. If a player is consistently missing left, they can study a shooter's footwork or elbow to help solve that mystery.



"Where do you need the help most?" said Pachulia, a 46.9 percent career shooter. "That's what data is for, right? It's like going to the doctor and saying, 'Here's my problem.' And the doctor can look at that and say, 'Here's what's wrong with you.'"

The drills also have an option for competition. You can measure your shooting against the other players on-site or even against players signed into the technology across the country. Not long ago, Pachulia and his son, Davit, gave Dirk Nowitzki and his boys a tour of the setup at the Warriors old practice courts. And the NBA families wound up dueling in neighboring 360 Shooting cages.

"That's the beauty of it," Pachulia said. "My son, you don't know how many times he's come back from the 360 facility and said something like, 'I just played against this kid from Indiana.' So one day he beat him, the next day he lost to somebody in another state.

"He was all excited, especially because today — during the pandemic — kids miss the competition. That's the beauty of sports — the competition, right?"

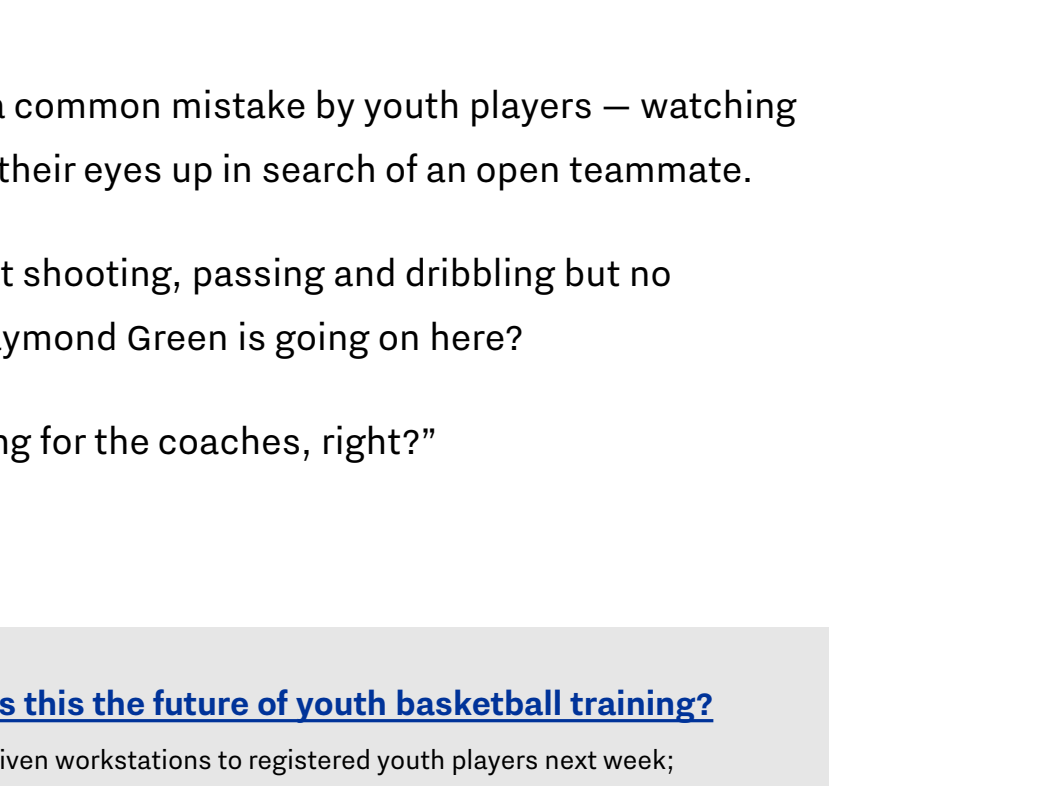
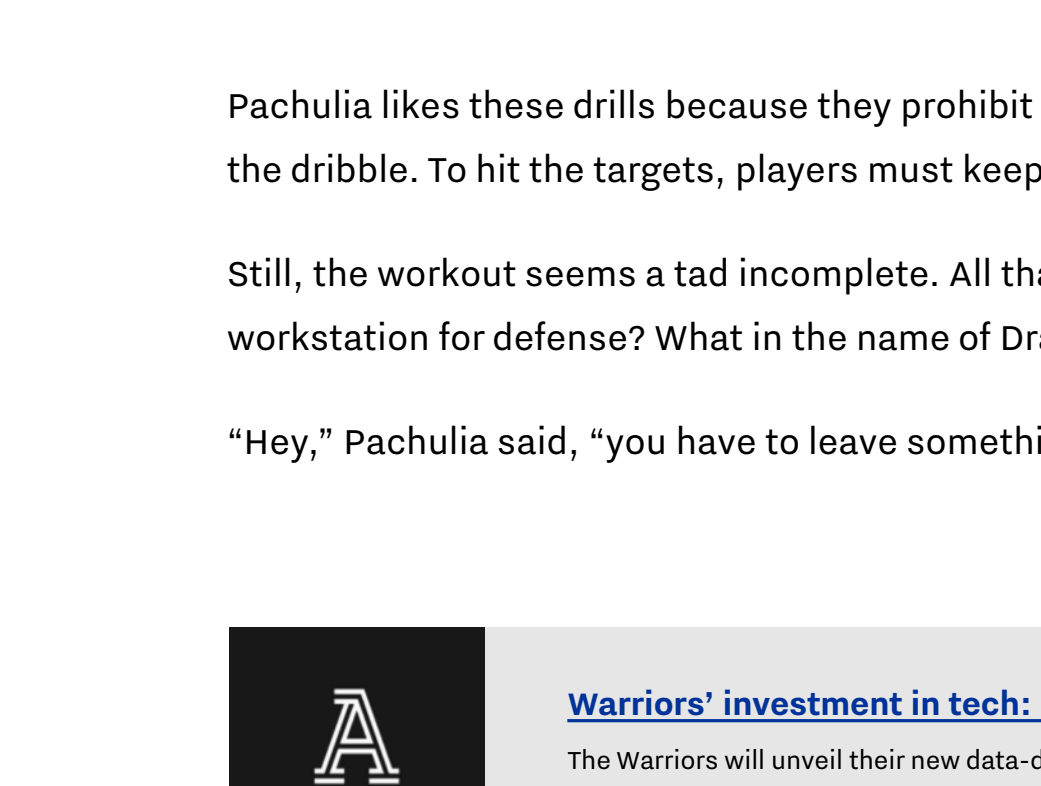
The video game element is no accident. Craig Moody, the entrepreneur and former high school coach who opened his prototype Shoot 360 facility in 2012, has said his "aha" moment came when one of his sons was yelling and screaming while competing over a video game. The competitive juices struck a chord, but Moody envisioned something more physically fulfilling. One night, he woke up and started sketching blueprints for Shoot 360.

"Kids in today's generation don't argue with computers," Moody said. "If it comes from a computer, they say, 'Hey, that's right.'"

One screen laid out a workout called a Crossover Progression:

Fingertip Crossover
Quick Crossover
1 Pound Crossover
Pound + Double Crossover (left)
Pound + Double Crossover (right)
Crossover + Shooting Pocket (right)
Crossover + Shooting Pocket (left)

At this same station, there are also passing drills. In one simulation, floating targets drift across four quadrants at varying speeds. The green circles float by with a point total such as "43" dead center. Hit the target, collect those points. Hit the red circle instead and lose whatever points were inside that red target.



"Any kid can pick up a ball and work on their ball-handling and shooting. But how many kids are picking up a ball and working on passing?" Addiego said.

"So this is a way to make passing fun because you're getting statistics on how you perform. You're making targets explode. Kind of adding those video game components to it (makes) kids love working on their passing."

Pachulia likes these drills because they prohibit a common mistake by youth players — watching the dribble. To hit the targets, players must keep their eyes up in search of an open teammate.

Still, the workout seems a tad incomplete. All that shooting, passing and dribbling but no workstation for defense? What in the name of Draymond Green is going on here?

"Hey," Pachulia said, "you have to leave something for the coaches, right?"



Warriors' investment in tech: Is this the future of youth basketball training?
The Warriors will unveil their new data-driven workstations to registered youth players next week; Zaza Pachulia is already a believer.