

ChildArt

The Magazine of the International Child Art Foundation

October-December 2018



AARON WALSH ON

IMMERSIVE EDUCATION

Though Aaron Walsh has been involved with virtual reality (VR) and video games from his early years, today he leads efforts to bring Blockchain and education together, exploring how advances in technology and pedagogy can benefit students and teachers.

Blockchain is a way of securely protecting information, making that information available around the world. "In a simple sense, Blockchain is a secure, reliable, network technology that is going to have a big impact on a lot of what we do in the future," Walsh says.

The concept of Blockchain started with Bitcoin in 2008. "Blockchain is the underlying network technology that cryptocurrencies, such as Bitcoin, use to secure their currencies on the network and to allow them to be safely stored online and exchanged online."

There are a variety of ways to use Blockchain for education. The Immersive Education Initiative, which Walsh founded and directs, is developing a digital incentivization and reward token called a Knowledge Token® or Knowken. "The skills students learn are recorded permanently and reliably on the network using Blockchain technology. They get Knowkens in return for the skills that they have learned, and then they can spend those (to buy items online). The Knowledge Token® is used to incentivize and reward learners. And the part that is most important, related to the Blockchain, has to do with the students' information. What they have learned, when they learned it, and how they learned it, is stored as a certified and un-hackable record that students can use like a resume and also as credits in high school or college. In this way the Blockchain is central to the Knowledge Token® ecosystem.

"I think that generally Blockchain technology will slowly, but certainly, begin to replace some of the core networking infrastructure that schools rely on. Primarily because

it is very reliable technology, and very robust, and proven to be very secure. It revolves around security and securing information, which is very important to schools," says Walsh.

"It will take a little more time before the Blockchain will be utilized enough for a university to use it for admissions, but that is exactly what the Knowledge Token® Blockchain is for: to record all of that information so that it cannot only be used for college admissions, but also for colleges to use it themselves by adding to it. The Knowken Blockchain is essentially the transcript of the courses, grades and even activities that students participate in. The intention is that students can start with the Knowledge Token® Blockchain in preschool and they can earn these tokens and credits all the way through their high school career, along the way accruing Knowkens that they can redeem for products, games, iPads, iPhones, computers, etc., and that they can also use to pay for college tuition. When students are looking for jobs, a potential employer can look at their record on the Blockchain and say 'OK, these are the courses they completed, these are the grades they got, this is the degree they actually earned, these are the skills they have mastered' and so forth."



IMMERSIVE REALITY

Walsh was born in San Francisco then his family moved to La Junta, Colorado—a town that grew when the Gold Rush and Westward Expansion came through. “My father and mother were responsible for my creative development. My mother was an artist, and my father was a writer. He also taught creative writing at the college La Junta, so between the two of them, I believe most of my creativity came from the home.”

In the summer between sixth and seventh grade, Walsh started taking college courses in computer science. His father would drive him, back and forth, to the college in Pueblo. By the time he finished high school, he had the equivalent of an undergraduate degree in computer science. At the age of eighteen, he was hired by Boston College as a professional in the university’s Information Technology department.

Before moving to Boston, he had read about the Boston Freedom Trail, the Boston Massacre, Paul Revere’s Ride and the Boston Tea Party ship, but was not particularly interested in these stories. All of a sudden he was actually walking on the Freedom Trail, visiting Paul Revere’s House, stepping on the site of the Boston Massacre, and boarding the Tea Party ship. “Something that I really didn’t have much interest in at all when

I was studying it in high school, suddenly became very real to me. I fell in love with the events of the American Revolution, and became very excited about them because I became immersed in these experience in my real life. With my own eyes I could see these things, and with my own body I could experience these things. That was very, very powerful.

I was working with virtual reality at the time, and was one of the first people in the world to build a personal virtual reality system. After I built it, which I did with my boss at Boston College in 1990, I started to think that VR could be used for education. I could make it possible for people to have that same immersive, realistic experience that I had myself when I was walking the Freedom Trail when I first came to Boston.

My vision was that in the future, students would be able to experience fully immersive learning experiences over the Internet, right from home, allowing them to become truly excited about things that may not interest them by just reading or watching a video. And so, Immersive Education started because of my own personal experience of sitting in

class, reading textbooks, looking at black and white pictures, and having very little interest in some of these subjects because they seemed so far away from me. And then suddenly, by being immersed in reality in Boston, by actually being around these things, the way I felt changed. I became engaged, excited, and was prompted to learn more about these things all by myself simply because I was able to visit these places in person. Shortly after that I built one of world’s first personal virtual reality systems and started thinking about the ways we could apply the concept of digital immersion to education, as I felt certain that immersive technologies could be used to deeply engage students no matter where they were.”

