

Dahl takes a sip of his coffee. "What I can tell you is that IVR is going to play a huge role in the future of neurorehabilitation and other areas of medicine as well, because it affords us the ability to substitute the user's body with a virtual body in an environment in which we can control all the variables. And because the user is fully immersed, becomes one with his virtual self, this immersion can result in measurable changes in perception, attitude and behavior."

"Do you think that IVR is the way to go for all disabilities? I ask this because my original idea was to combine BCI with laptops?" Tom queries.

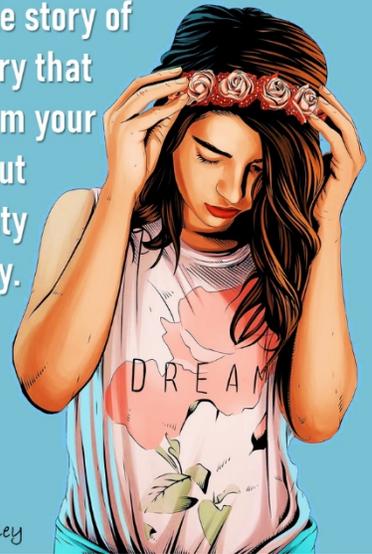
"There is plenty of research showing that users experience a higher level of embodiment, of body ownership, when they are interacting in immersive virtual reality than when they are interacting with a computer screen. And that this increased sense of embodiment leads to better sensorimotor neurofeedback performance. But that being said, for certain types of cognitive and memory enhancement tasks, studies have shown that two-dimensional or laptop viewing results in better performance. In other words, for some skills, passive viewing still works best."

"Very interesting," Dan comments, jotting something down on his notepad.

"The value of IVR," Dahl sits back, crossing his arms over his chest, "is that we can provide users with all kinds of varied experiences in a safe, yet stimulating, setting. We can control the number of obstacles or challenges, raising them or lowering them as needed. For individuals with autism, it is a great way to learn to be more independent in daily living skills. You can learn to make yourself a sandwich, go to the ATM and withdraw money, purchase items at a convenience store from a shopping list. And, while you are doing all of this, your brain is forming new neural connections and this activity can be monitored and recorded. With each experience, your brain changes and you become more confident and independent.

## WHO IS ANNA?

A remarkable story of self-discovery that will transform your thinking about neurodiversity and disability.



By Gail Buckley  
and Meaghan Buckley