



3DNOVATIONS : AWARD WINNING VIRTUAL WORLD LEARNING AND DEVELOPMENT

Imagine talking to someone online whose typing shows they are intelligent and articulate – then discovering they are selective mute in real life due to autism-induced social anxiety. Their knowledge should qualify them to begin a career with great prospects, but it's going to waste because they can't get a job. You'd want to do something to change that, wouldn't you?

3DNovations is working to do just that. In designing virtual spaces for people with Autism and other complex needs, 3DNovations offers a safe environment for vocational skills development, peer support and exploring creativity, levelling the playing field for improved social interaction and career progression.

Our Challenge: Using the Online World to Improve the Offline One

Being on the autistic spectrum can feel like you're trying to play a game where everyone else knows the rules and you don't. The resulting unpredictable barrages of disapproval, exclusion and ridicule make many people withdraw, to varying extents, from the world. Yet that doesn't mean autistic people don't want to socialise. Witness the growth of virtual online communities such as the Autcraft server for Minecraft, whose founder, Stuart Duncan, attributes its popularity to the fact that people let their guard down in a safe space where they can interact as avatars¹. Many people on the spectrum also want to work, but the National Autistic Society's Don't Write Me Off campaign found that just 15% of autistic adults had a full-time job and a third had no job or benefits². That led Nicola Herbertson, founder and CEO of Hao2.eu Ltd, to wonder: could the safe atmosphere and versatility of the virtual world teach people the skills and confidence needed for the world of work?

Our Solution: Virtual Worlds Teaching Real Life Skills

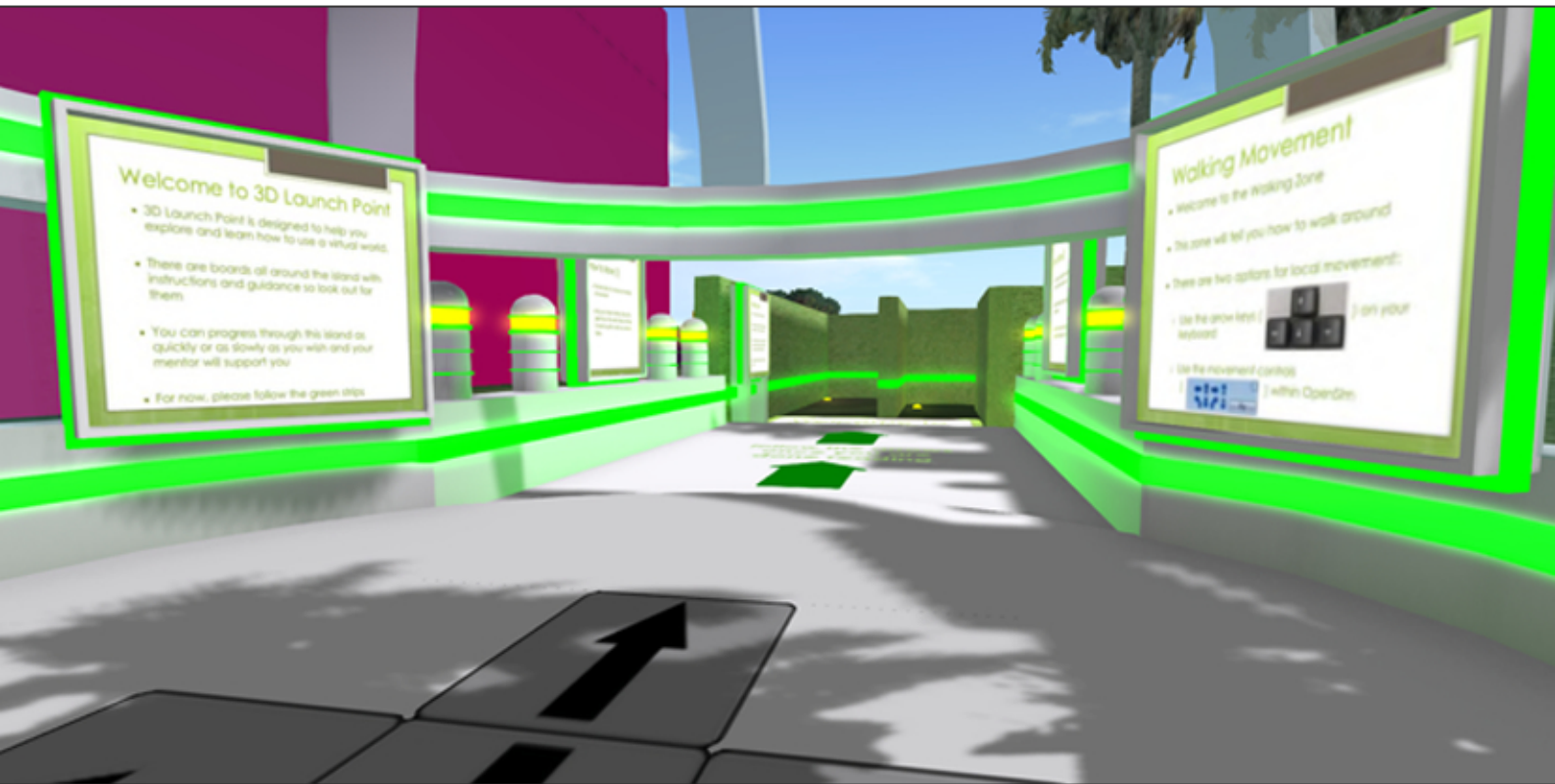
Enter the 3DNovations virtual environment. Those who are beginning a programme will do so via taster islands where participants soon get up to speed with finding their way around the virtual world by literally learning as they go along.



1> <http://www.msn.com/en-nz/health/medical/how-this-minecraft-community-is-saving-childrens-lives/ar-BBkCyEc>

2> <http://www.autism.org.uk/sitecore/content/Microsites/DontWriteMeOff/Home/About-the-campaign.aspx>

The taster itself is a themed scavenger hunt where learners seek out numbered boxes in our City Scape (above) or Village environments which, when found, ask questions about skills, interests or set basic virtual world learning tasks to boost confidence and avatar control abilities.



Once you've had a taste of our platform you progress to 3DLaunch Point our dedicated virtual environment learning space divided into practical zones (walking, running, communicating, building, photography) carefully designed with gaming techniques to keep people learning, motivated and inspired to do more.

Having successfully completed 3DLaunch Point learners are confident and equipped to receive their own personal island to call 'home' where they can explore their creativity and hone their newly developed skills. They are also ready to participate in other 3DNovations activities including teleporting to game islands for team building games, The Teaching Hub where interactive workshops are held, and simulation islands to role-play in shops, clinics, offices etc.



In this autism-friendly world, participants can choose from a range of employability and life skills courses, ranging from job coaching to City and Guilds accredited courses all infinitely customisable to work with learners' individual interests and learning needs.



Five years later, this innovative use of technology aligned with the social spaces people with autism and other complex needs seek out is achieving impressive results. 3DNovations' most recently completed project with Winchester Jobcentreplus had 40% work-related outcomes for people in receipt of Employment Support Allowance, compared to 10.2% national average for the Work Programme³. Engagement and retention were close to 100%, with progression, achievement and improved confidence all scoring high or very high. Previous projects using our virtual environment boast similar outcomes. Alumni from past projects in London have gone on to work in fields as diverse as software testing for an HR management SaaS company, finance for local authority, technical support for a London college, customer service at the Olympic Village and presenting a radio show.

For Our Learners: Safety, Visual Learning and Motivation

A key advantage of the virtual environment for teaching life skills and work skills to people with autism is that it is perceived as a non-threatening space. A study by the University of Cambridge into making higher education more autism-friendly noted the need to offer more options to interact online because many people with autism are more comfortable with such interaction⁴. Meanwhile, research at Carleton University, Ottawa noted that autistic people showed a strong preference for online interaction and hypothesised that this might be due to the familiar structures of online communication, the ability to choose topics of conversation and/or the option of responding in one's own time⁵.

3> <http://cesi.org.uk/responses/dwp-work-programme-how-it-performing-4>

4> Hastwell, J., Harding, J., Martin, N., Baron-Cohen, S., 'Asperger Syndrome Student Project 2009-12: Final Project Report, June 2013', <http://www.disability.admin.cam.ac.uk/files/asprojectreport2013.pdf>

5> Johnson, J., 'Exploring the Social Experiences of Adults on the Autistic Spectrum: Views on Friendships, Dating and Partnerships', <https://curve.carleton.ca/system/files/theses/31686.pdf>



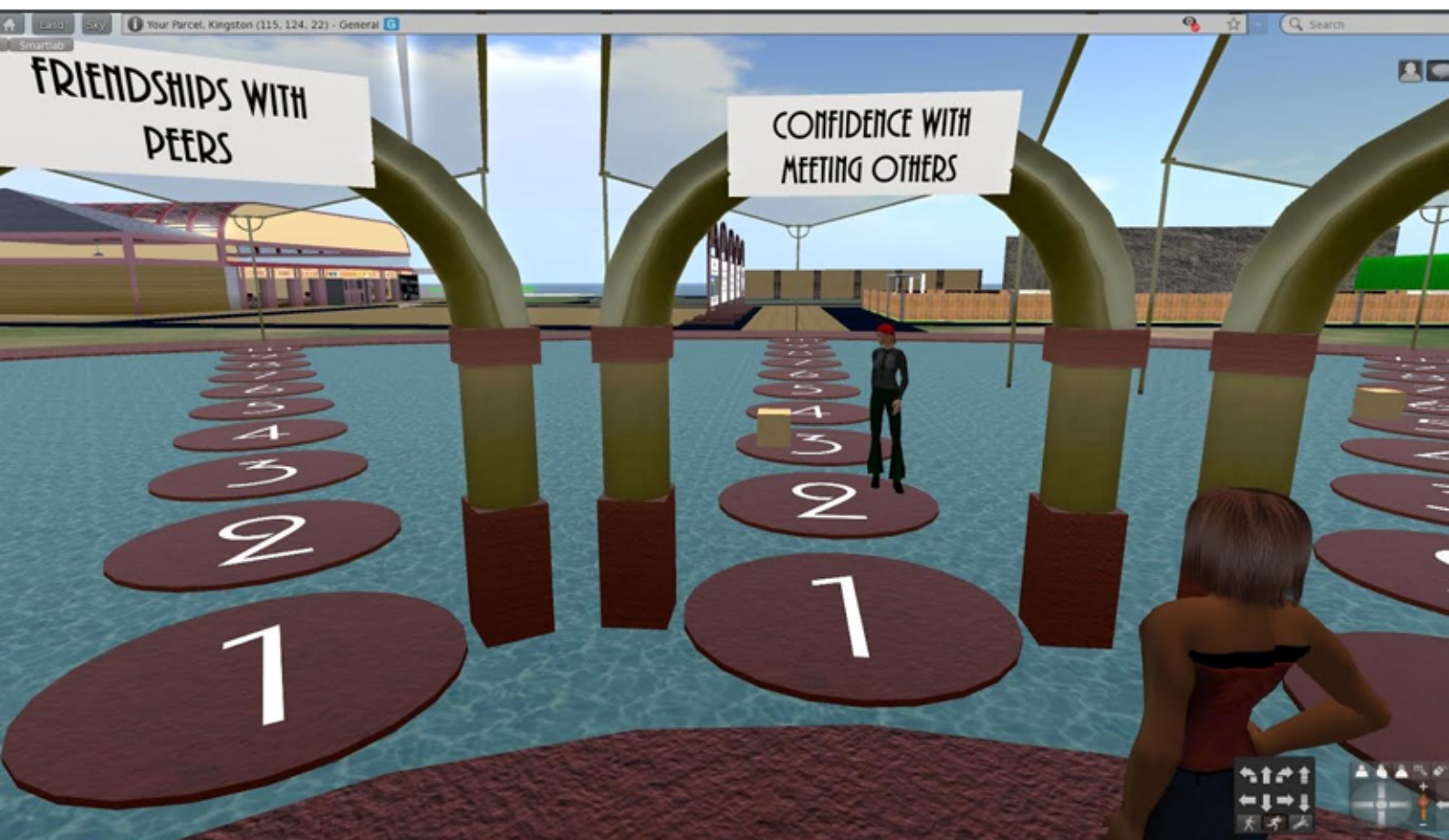
In line with the Cambridge study recommendation, 3DNovations recognises that online interaction should be a starting point. Our virtual environment is designed to be a safe space to help people with autism and other complex needs reach beyond their comfort zone. For instance, participants may start off communicating by text in the virtual world, but move on to voice as they gain confidence. Likewise, if a participant finds a particular environment difficult or overwhelming (e.g. public transport was a recurrent theme in the last set of local authority Autism Self-Assessment returns⁶), a simulation can be built in order to practise until it becomes familiar. With little or no experience people can enter the environment to deliver talks or workshops to people with autism or complex needs who might otherwise not engage. As such, 3DNovations has hosted professionals giving talks on working in their industries and facilitated workshops including Barclays' workshop on money management, Young Advisors on peer mentoring as well as Just Add Spice on Time Credits where using avatars has provided sufficient anonymity to embolden the more self conscious participant to attend and even ask questions and share personal experiences they may not in a face to face session. This short video shows just some ways the environment is used: https://www.youtube.com/watch?feature=player_embedded&v=CkFalyv1Gps

The virtual world environment facilitates learning for people with autism because of its strong visual elements. Research at the University of Montreal shows that people with autism concentrate more brain resources on visual detection and identification, and that this extra processing power enables them to complete higher-level cognitive tasks in their own way⁷. Researchers at Plymouth University concluded that people with autism should be encouraged to play to their strengths by building on their excellent visual learning abilities⁸. 3DNovations' virtual world makes this easy. Examples of innovative uses of the platform include: a) Training sessions for an in-person audience also being delivered simultaneously in the virtual world, with participants at both locations asking questions and presenting results from group activities, each in the way that best suited them; b) Virtual premises constructed with distinct zones between which participants can move to show what level of social interaction they are interested in at present, thus helping participants to find collaborators for activities; c) An 'evaluation star' where participants place markers on scales to indicate their level of confidence in various skills and can then take screenshots to track their progress.

6> <https://www.improvinghealthandlives.org.uk/projects/autism2013>

7> <http://www.sciencedaily.com/releases/2011/04/110404093149.htm>

8> <http://sfari.org/news-and-opinion/blog/2014/attention-to-detail-may-aid-visual-learning-in-autism>



As well as providing a safe learning environment and training that suits people with autism's learning style, 3DNovations motivates learners by its user-led approach. This is a natural corollary of our belief that autism spectrum conditions do not make one any less than others, just different⁹. Participants evaluate their own strengths and weaknesses and create and visualise personal 3D projects to address the weaknesses and build on the strengths. As well as their personal islands, any user can contribute their personal touch to the space by creating things that enhance the environment, e.g. the taster islands, which still bear the names of participants who helped build them. The virtual environment provides a platform for learners to engage in peer mentoring. On completion of courses, learners can gain work experience training others to use the virtual world and/or build customised 3D environments for local authorities and other organisations (such as JobcentrePlus Swindon, now the proud owner of an exact digital replica of its premises for a Journey to Employment project) who have ordered 3DNovations Hubs. The virtual world facilitates all this by making geographical distance irrelevant.

For Our Partners: Cost-Effective and Future-Oriented

The ability to access the virtual world from anywhere also makes for significant cost savings. Traditional methods of teaching employability skills to people on the spectrum involve travel and accommodation costs and run the risk of being made less effective by sensory issues. Attempts have been made to solve this with e-learning and MOOCs, but these approaches have other drawbacks which may particularly affect people with autism or other complex needs. Even the American site About E-Learning, which promotes online courses, recognises that such courses are not for everyone as e-learning's lack of structure may adversely affect motivation – and also that e-learning is generally low on social interaction, which is a big problem if that is what you are trying to teach¹⁰.

3DNovations' virtual world is also more cost-effective than other 3D simulations for learning because it runs on Opensim software that enables users to create their own content alone or collaboratively. Best practice can be shared through our 'AIM grid', an open source platform designed to run all kinds of virtual world solutions. There is no need to spend vast sums on design and setup: if our users can imagine something, they can build it.

9> <http://www.msn.com/en-nz/health/medical/how-this-minecraft-community-is-saving-childrens-lives/ar-BBkCyEc>

10> <http://www.autism.org.uk/sitecore/content/Microsites/DontWriteMeOff/Home/About-the-campaign.aspx>

Not only does 3DNovations achieve better user outcomes for organisations and save them money in the process, but in addition, we help them attain a range of wider benefits. Because participants learn in the virtual world, they acquire digital skills, which our economy desperately needs. O2 estimated in 2013 that the UK economy will require 745,000 additional workers with digital skills by 2017¹¹. As befits a digital-by-design service, procurement for organisations is made easy by our presence on the Digital Marketplace, while individuals can purchase courses with personal budgets through our charitable arm Autus, which is present on many councils' Local Offer sites. Providing training in work skills via the 3DNovations virtual world also helps government organisations fulfil the objective of Digital-by-Default services, which take advantage of more open and agile technology to deliver better services at lower cost¹². This has in turn inspired local authorities to look at other possible use cases for virtual worlds to make council services more accessible.

Don't just take our word for it!

We are happy to spread the word about 3DNovations and the impact the virtual environment is having on people with complex needs such as Autism. But the real proof is in what people people say about what 3DNovations has done for them:

'Using this virtual environment and an avatar has done a lot for me like meeting new people, making great stuff. It's good for me and Autistic people because we can work in a comfortable and safe environment where people get to know you by your personality not by your looks or behaviours'

Nathen, Epsom Surrey

'I feel a lot more confident now that I have done a programme using the virtual world'

Ray, Dorset

'Having the opportunity to refer a number of our students to your scheme has been an amazing addition to the support we've been offering, and I'm absolutely convinced that their participation in working within the "virtual world environment" has made a huge difference in many areas of their lives.'

Alun Wilkins, Specialist Employment Advisor, REMPLOY

'The building aspect is quite therapeutic and can be very useful for choosing a career path.'

Ben, Hereford

'My son has really enjoyed the course, the content of which has thoroughly engaged him. The method of teaching is particularly appropriate to people like him because there is no demand to personally/socially interact, have conversations or feel the pressure of travelling, and meeting new people in unfamiliar venues.'

Shelagh, parent of learner, Banstead, Surrey

11> <http://cdn.news.o2.co.uk.s3.amazonaws.com/wp-content/uploads/2013/09/The-Future-Digital-Skills-Needs-of-the-UK-Economy1.pdf>

12> <https://www.gov.uk/government/news/digital-by-default-proposed-for-government-services>

By using virtual worlds to train people with autism, 3DNovations manages to teach people the skills they and the UK need, in the way they want to learn, with better results and for less expense. The people we have helped gain the confidence to find fulfilling work and / or achieve traditional qualifications in this non traditional way have become some of our loudest advocates.



For more information, please visit us at <http://www.3dnovations.co.uk> or contact us at info@3dnovations.co.uk

