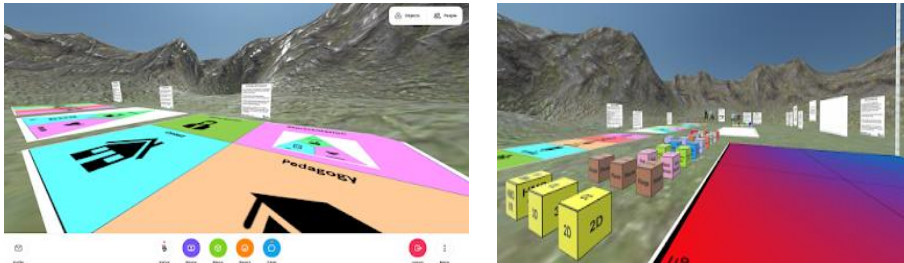# Virtual Experience Design Space (VEDS)
Using Virtual Environments to Design Virtual Experiences

On the basis of practice-what-you-preach we've created a prototype Virtual Experience Design Space (VEDS) in Mozilla Hubs and opened it up to public use. The space takes a number of design tools that we've used for many years, and which we already have within our Daden Campus space in Trainingscapes but makes them available to anyone with a browser (including mobile) and any WebXR capable VR headset (such as Oculus Quest). Of course the nice thing about WebXR (and so Hubs) is that everything runs in the browser so there is no software to download - even on the VR headset.

Within the space we have four different 3D immersive experience design tools:

- A dichotomies space, where you can rank different features (such as linear/freeform or synchronous/asynchronous) against a variety of different design factors (such as cost, importance, time, risk).
- Sara de Freitas's 4D framework for vLearning design
- Bob Stone's 3 Fidelities model
- Bybee's 5E eLearning design model

Each is represented by a suitable floor graphic and then how you use them is up to you. There are labelled boxes for the dichotomies space - but you can use them anywhere. There are also a set of markers, so you can get people to "vote" by placing markers (or even their avatar) where they think the most important/biggest issue/biggest risk is. It's all about using VEDS as a social, collaborative space to do immersive 3D and VR design.

Of course Hubs has its own set of generic collaboration tools to use in-world and you're free to make use of those too, we've provided a media frame and a couple of whiteboards to draw on, and you can rez any of their standard objects - why not mark choices with cheeseburgers!

Want to give it a try? Just point your 2D or VR browser to:

https://hubs.mozilla.com/PNaoEvs/daden-virtual-experience-design-space

You can get a hub.link code from your 2D browser to use to get easier access from VR.

No sign up is necessary, but remember that if you use our room, rather than spawning your own, then you may well meet other users (including us) in there.

We'd love to hear what you think of VEDS - email us at info@daden.co.uk if your organisation could do with a similar space structured around the collaboration tools you use.

There's a video walkthrough of the VR experience at:
https://www.youtube.com/watch?v=atA7HV-4bMs&ab_channel=DadenVideos

Wonderland

Keeping with the theme of WebXR we've also been looking at some of the emerging WebXR editors and authoring tools. Whilst Mozilla Hubs (see left) is currently quite limited in the interactivity it can offer, WebXR editors promise to let us develop more interactive immersive 3D experiences – which are still played in your web browser or VR headset.

Wonderland seems like one of the best of the bunch (and not to be confused with the old Project/Open Wonderland virtual world from Sun back in the 2000s). It feels much like a slimmed down Unity – which is sort of what we're after. We import and place 3D assets as gltf/glb files as with Hubs/Spoke, but we can then attach scripts and behaviours, and even write our own in Javascript.

Whilst the authoring is far more complex than with Trainingscapes, and not something we'd recommend clients playing with directly, it does offer something of a half-way house between the relatively passive Hubs experience and a full-on bespoke, Trainingscapes or Unity experience – and like all WebXR apps doesn't need end users to download and install anything.

So, if you've got a project which has only moderate scripting needs then a Wonderland project may be a good way to develop something that can rapidly reach a large audience. Just give us a call if you'd like a demo.

More Hubs! Daden Hub and Onboarding
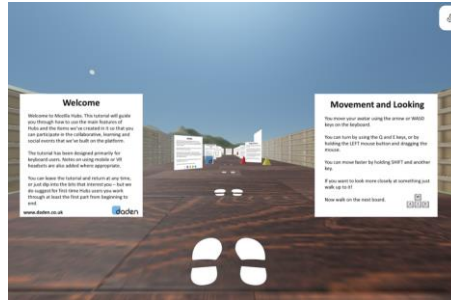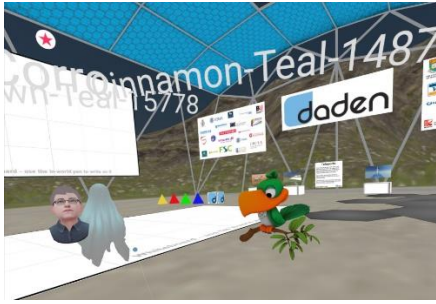
As well as the VEDS space discussed on the front page we've also created two more public-access spaces on Mozilla Hubs. The first Daden Hub – is our "home" on Mozilla Hubs. We've been using it for internal meetings, as a demonstration space to show Hubs off to new clients, and we also intend to use it for meetings which are nothing to do with Hubs – it just makes a great change from constant Zoom and Teams meetings. All the Hubs collaboration tools are there, so we can screen share, document share and use the virtual whiteboard. The other space is an Onboarding Zone, so that when we (or our clients) host events in Hubs users can walk themselves through a tutorial first in order to understand how to use the platform. You can visit either of them in your own time at:

- Daden Hubs: https://hubs.mozilla.com/SJy5Hwn/daden-hub
- Onboarding Space: https://hubs.mozilla.com/fFVfvrq/onboarding-tutorial

Just give us a call if you'd like a Daden Hub style space to support collaboration in your own organisation.

Chatbots and Knowledge Graphs

One of the things we've been long convinced about is that knowledge graphs, and the semantic triples concept that underlies most of them, are going to be key in developing chatbots that "understand" far more about the world and what is said to them, and in creating conversational responses that are just that much more human. A couple of recent articles/papers exploring this same territory appeared recently:

- Walid Saba, Principal AI Scientist at ONTOLOGIK.AI posted a nice piece on Medium entitled *Ontology, knowledge graphs and NLU: three pillars of one and the same system* which gives a nice primer on the approach, and highlights the issues of standardised ontologies and good graph design.
- Hongyu Wang et al of the Academy of Armored forces of the PLA army, Beijing, China (!) has a nice paper on *A review of military knowledge models* which presents a very similar architecture to that which we started to develop as part of the Virtual Persona project with the MOD in order to develop a knowledge graph as the basis for a virtual military expert.

Our own developments in this space continue. We've moved away from the Chatscript chatbot authoring language as we found it just didn't have the richness and sophistication to manage the more coding orientated parts of our particular brand of chatbot development. Instead, we've moved to NodeJS, which has enabled us to leverage some good machine-learning based natural language parsers and toolsets, and integrated it with the Grakn knowledge graph system. We're getting close to a new demo, so watch this space.

This Quarter we've also …

- Been interviewed about Virtual Humans on the Dr Zero YouTube channel – see https://youtu.be/x3Zf2S4nu-I

- Spoken at the IORMA webinar on chatbots, virtual humans and the consumer – see https://youtu.be/sPZQAvale1I

- Been interviewed on the 1202 Human Factors podcast about Virtual Humans

- Continued to support the MOD in a set of simulation exercises – our focus has been in using our natural language processing skills to generate synthetic social media messages around the exercise activity.

- Demonstrated 360 degree photospheres in Mozilla Hubs – here's part of Uluru…

- Held a Daden social in RecRoom, a VR app which let us go paintballing, play frisbee golf and discover Dodgeball all from the social-distanced safety of our own homes!

Get in Touch!

If you want to talk through a potential project, or just understand the tech better then just email info@daden.co.uk or call us on +44(0) 7811266199, or visit our website at www.daden.co.uk. We look forward to talking to you.