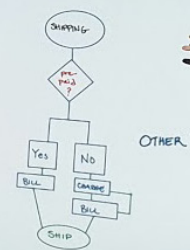




How to replicate face-to-face learning with the Igloo Immersive Learning Environment

How a virtual lecture theatre can keep teachers teaching and students engaged



The need for new remote learning solutions

In a Covid-19 world, universities across the globe are scrambling to adapt to remote learning. And even beyond the crisis, it seems inevitable that remote learning models will become more prevalent.

Often, consumer-grade video conferencing are the go-to tools. Yet, in-the-raw, they don't come close to the traditional face-to-face experience.



This is the press shot of Harvard Business School's HBX Live facility. Located inside a TV studio, it's intended to "reproduce the intimacy and synchronous interaction of Harvard Business School's famed teaching". It's a prestige facility for a prestige institution which, presumably, has a prestige price tag.

With Igloo technology, we're bringing an equivalent experience within the reach of pretty much any university, located anywhere in the world - except that it's very affordable, it's ever-so-easy to operate, and it can also be used for a full range of immersive teaching and learning applications.

A hard act to follow

The traditional lecture theatre is a hard act to follow. It's been around for millennia (literally) - and for good reason.

An experienced lecturer can hold the room, sharing their passion, imparting their knowledge, and enabling deeper levels of understanding.

They can also get an immediate and direct sense of how their audience is responding:

- Is the message landing?
- Are the students engaged?
- Who's being attentive (and who isn't)?
- Which subjects need more explanation?

There's a sense of theatre to the whole thing - a deep and direct connection, not just between the lecturer and the audience, but between the students who make up the audience (some

of whom may be more interested in each other than in the class they are attending).

And just as you wouldn't expect an actor to perform their best in an empty theatre, we can't expect teachers to perform at their best teaching an empty classroom, sitting at a computer. You could also argue that the traditional lecture theatre is central to the student experience, and it's a very big void to fill.

Let's take a lesson

Several of the world's wealthiest business schools and universities have looked at ways to solve the dilemma of maintaining the model of the lecture theatre while providing access to remote learning. Several of them have created their own immersive learning environments.

Take a look at:

- Harvard Business School - HBX Live
- IE Business School - WoW Wall
- Saïd Business School - Oxford HIVE
- SP Jain - ELO Room

They've all built multi-million-dollar facilities, which typically use TV studios and live broadcast technologies (HBX Live is actually located inside a real-life TV studio).

They all aim to replicate the lecture theatre experience - bringing the intimacy and synchronous interaction of live teaching to remote learning models. And they all report great results from their investments.

No, admittedly, it's not quite the face-to-face, eyeball-to-eyeball experience of the physical classroom or lecture theatre. But, these facilities do appear to work very well, reporting good levels of engagement and interaction. And, against several metrics, it's suggested that they can actually out-perform physical teaching and learning spaces.

For example:

- It's actually easier to see if students are distracted or inattentive (no one can hide in the back)
- A chat function can make it simple for students (especially the shy

ones) to ask questions and share their thoughts

- You have the opportunity for great real-time polling, whiteboarding and interaction functionality
- With the option of analytics, you can understand and track student involvement, engagement, attention, and even emotional reaction.



The 10 characteristics of an effective immersive learning environment

The way we see it, based on our 10+ year experience in Shared VR and immersive displays, to live up to the promise, there are ten prerequisites for an effective immersive learning environment

- 1 Offers a great experience to the lecturer - enabling them to see, engage with, and perform for their entire class (and move freely around the stage as they would in a traditional lecture theatre).
- 2 Offers an equally great experience to the students - enabling them to see each other, as well as the lecturer, and giving them a ringside view of all the teaching aids.
- 3 Is equipped with a vast, wraparound 360° screen - enabling the lecturer to see and engage with the audience (in front of them) and share a full range of teaching aids (behind them).
- 4 Is super-simple to control by any lecturer, enabling them to set and change camera angles, and use whatever teaching aids they choose to use.
- 5 Integrates seamlessly with Learning Management Systems (LMSs) and/or enables students to refer back to full recordings of every session.
- 6 Integrates with any standard or specialised video conferencing solution - from the likes of Zoom, Teams or Webex, to the specifics of Mashme.io, Blackboard.com or Adobe Connect.
- 7 Enables students to join from anywhere, using any device, with no need for any onerous downloads or software to install.
- 8 Looks and feels like a prestige or showcase solution - yet is within realistic financial reach of any university (or even any university department).
- 9 Fits entirely within the envelope of the university IT network (fitting-in with everything from room control systems to security standards).
- 10 Enables the lecturer to judge student attention and sentiment - either by having a close-up view of students, and/or making use of the chat function and/or the option of analytics.



With all of that in mind, here's our pitch...

At Igloo, we can bring a Harvard-type facility within the reach of pretty much any university, anywhere in the world.

You can expect to get an equivalent experience, with equivalent functionality, except that:

- It costs a fraction of the price - perhaps less than one-tenth, but certainly less than one-fifth
- It's ever-so-easy to operate - instead of needing a team of AV technicians, one lecturer can use a super-simple interface (a bit like those big-button telephones designed for the old and the infirm)
- Instead of it being a one-trick-pony, you're also be able to use your Igloo for all those other things that have made education our biggest, fastest-growing market - like taking virtual field trips, visualising 3D designs, running repeatable experiments, presenting complex data, running simulations, preparing students for the new world of work, etc, etc, etc

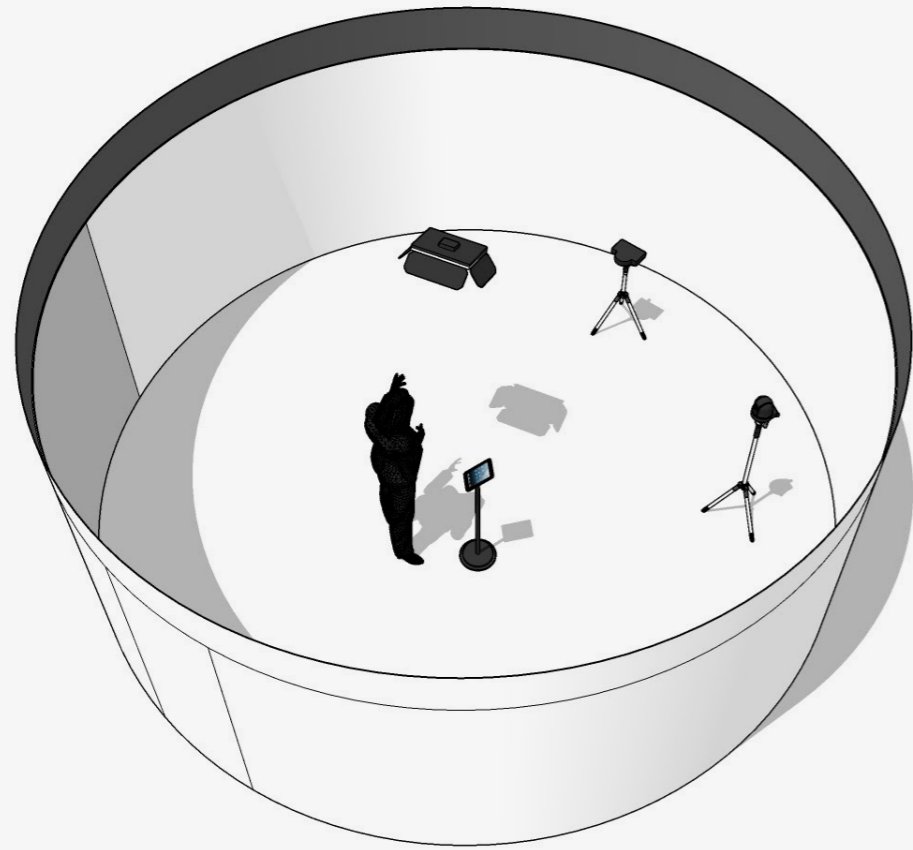
Our vision for immersive learning spaces

An Igloo Immersive Learning Environment is a physical space from which university lecturers can deliver lectures and tutorials to students located anywhere.

It's much like a traditional lecture theatre, in that the lecturer sees their class before them (in the form of a montage of faces across a large proportion of the Igloo's 360° screen), and can choose from a range of teaching aids, like slides, whiteboards, videos, polling, etc.

Meanwhile, students benefit from a real sense of presence. They can see and interact with the lecturer and their fellow students, they have a ringside view of the teaching aids, and can refer back to a recording of the whole session.

It looks and acts a little like the TV-studio type systems found at high-end business schools - except that it costs a fraction of the price, can easily be operated by a single lecturer, draws on Igloo's frugal technology ethos, and integrates with standard video conferencing platforms (like Zoom, Teams, Webex, and more).



The anatomy of an Igloo immersive learning environment

Studio Lighting

Ceiling-mounted LED panel for soft lighting of the lecturer

Projectors

Typically, an array of 4-6 ultra-short-throw projectors, retracted into the ceiling

Operation

The Igloo Lectern app offers a super-simple interface - for camera switching and presentation control

Cameras

Typically, two cameras (a 180° 4k camera and an HD PTZ camera) enabling a selection of angles and views

Comfort Monitor

The lecturer gets an always-on, real-time view of what students are seeing down-the-line

Igloo Media Players

Can be housed in a nearby server room and fit within the envelope of the university IT network

Structure

A standard, off-the-shelf Igloo cylinder (available as 5, 6 or 9 metre) with lockable door and brandable outside cover

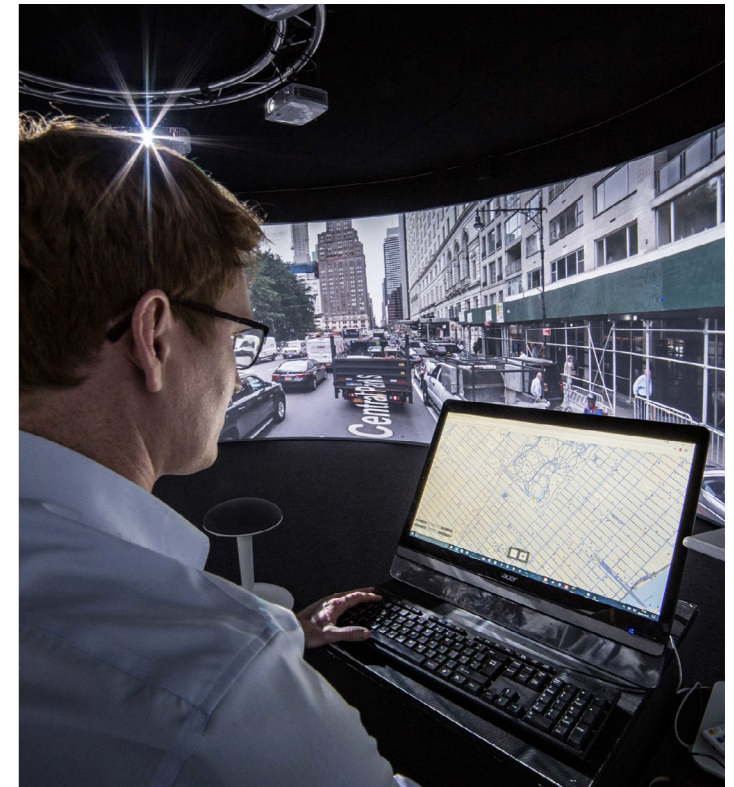
What else can you do with an Igloo?

Furthermore, immersive learning spaces are just part of the story. Igloos are never one-trick-ponies. They have plenty of uses. And universities around the world are adding them into their resources and embedding them into their curricular activities.

Igloo started out on the festival circuit and, bit-by-bit, moved into the worlds of both enterprise and academia. Education is our fastest-growing market as more universities become advocates for Igloo Shared VR technology. And, across the globe, we've been installing more-and-more Shared VR spaces in more-and-more schools, academies and universities, including:

- Shared resources in tech hubs and libraries
- Subject-specific research facilities
- Centres of excellence for immersive technology
- Single-use simulators

And, what's great (from an Igloo perspective), is seeing so many universities using our technology in so many interesting ways.



Here are just eight of the ways our university clients are using Igloo technology

- 1 Taking virtual field trips.** Take trips through time and space, without leaving the campus.
- 2 Enhancing game development.** A collaborative way to create and review VR gameplay in Unity and Unreal.
- 3 Preparing students for the new world of work.** With enterprise XR solutions taking root, and immersive workspaces taking off, employers are looking for job applicants with practical experience in immersive tech.
- 4 Visualising 3D designs.** View and adapt 3D designs as well as BIM and CAD data in an immersive group setting.
- 5 Creating repeatable experiments.** Run, repeat and adapt experiments, and incorporate sensory stimuli, without having to go out into the field.
- 6 Visualising complex data.** The vast 360° screen is the perfect way to analyse, interrogate, present and assimilate data.
- 7 Running simulations and planning scenarios.** Prepare and train groups of people in scenarios that are too expensive or hazardous to create in real-life.
- 8 Viewing and reviewing VR and 360° films in a shared setting.** A new generation of filmmakers are exploring the potential of immersive 360° content, and many of them love the shared experience of an Igloo.



For more information

Igloo Vision is the Shared VR company

We take any VR or 360° content and put it in a shared immersive space anyone can use. It's a bit like stepping into a huge VR headset. And, because groups of people can get inside, it's always a shared experience. So it's great for entertainment and experiences. It's also perfect for collaborative teamwork.

From bases in the UK, USA, Canada and Australia, we work with clients worldwide. Our largest, fastest-growing market is education. So far, 25+ universities have installed Igloo Shared VR systems, and many more installations are in the pipeline.

- Michigan State University
- University of Brighton
- Mid-Sweden University
- Cardiff University
- Arkansas State University
- Zhejiang University
- Florida International University
- Khalifa University
- California State University, Long Beach
- Ryerson University
- Deakin University
- University of Loughborough
- University of Essex

To find out more, visit us
at www.igloovision.com

email us on
info@igloovision.com

or telephone us on
+44 (0) 1588 673 337