Creating a high-end immersive teaching space with the Deakin Imaginarium

Deakin University uses an immersive 360° environment to improve and transform teaching

CASE STUDY - IGLOO CUSTOMER STORY

DEAKIN UNIVERSITY

Highlights

Early in 2020, **Deakin University** built a new precinct as part of its Geelong Waurn Ponds campus, extending an existing building.

The precinct forms a new innovation and learning space for the staff and students of the University's Faculty of Arts and Education, and is a resource for the wider University, and the Geelong community.

The newly-constructed facilities consist of a circular Think Tank for critical discussions, an editing suite, and a high-specification 9.7-metre diameter Igloo Shared VR cylinder.

The Faculty is already full of ideas about how to use the Igloo immersive environment:

- It will be used across all 900 courses run by the Faculty of Arts and Education, as well as by other faculties, such as the Faculty of Health and the Faculty of Science, Engineering and Built Environment
- It will help students to gain a deeper understanding of surveillance, privacy, and consent, in Criminology classes
- It will be used to help teach immersive storytelling techniques in Journalism courses
- It has been used to display 360° footage of classroom situations for trainee teachers to gain an understanding of the profession before venturing out themselves
- It will be used in research around how immersive technology can transform and improve educational practice

Initially, Deakin University has been impressed by:

The quality

The installation is equipped with cutting-edge technology that creates a high-end, immersive experience

The experience

Students have been able to notice things that they may otherwise have missed or taken for granted when revisiting scenarios in a 360° immersive space

The reaction

Staff and students from both within and outside the University have been impressed and wowed by the technology

The flexibility

Staff have noted how easy it is to use the Igloo tools, such as Google Street View, and the wide range of applications Shared VR could have

About Deakin University

A public university based in Victoria, Australia, **Deakin University** offers a personalised experience, enhanced by innovative digital engagement. It creates opportunities to live and work in a connected, evolving world.

With over 40 years of experience as one of Australia's leading tertiary education providers, Deakin has won numerous awards and teaches over 60,000 students each year. The University offers its students world-class programs and endless opportunities.

Deakin advances education through progressive teaching and research, with a strategic direction that provides a framework to enhance its approach to a digital future. From world-class research and facilities to its forward-thinking staff, to its technological infrastructure, to its exclusive partnerships, the University is constantly striving for new ways to improve the student experience.

As the world moves into an increasingly digital future, the University continues to innovate to keep ahead and equip students with the digital skills and literacy required for the jobs of tomorrow.

Deakin University's Faculty of Arts and Education is dedicated to being at the forefront of teaching, learning, creating, social development and fostering cutting-edge research and discovery.

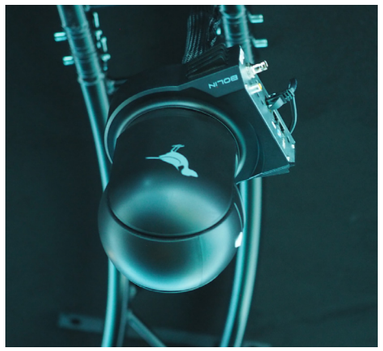
The situation

A need to refresh facilities + incorporate innovative technology

As a University with a reputation for innovation, Deakin wanted to uphold this by offering the latest technology for its students. More specifically, the University's Faculty of Arts and Education wanted to engage students more on campus and provide them with a richer learning experience. Across its three schools of Communication & Creative Arts, Education, and Humanities & Social Sciences, the Faculty is involved in research that has an impact across the world - and needed a space to facilitate this research.

The Faculty's home is the Geelong Waurn Ponds campus. The big idea was to renovate part of an existing building into a new, innovative precinct that the Faculty could be proud of, as well as providing an asset to the wider Geelong community.

Furthermore, the Faculty wanted the whole space to become an experience, in and of itself. As soon as someone walked in, they would be blown away by what they found. The building was relatively old, and the Faculty would bring it into the 21st-century and beyond.



The solution

Creating an innovative precinct for the Faculty of Arts & Humanities, and the wider University - including committing to Shared VR

The Faculty was keen to transform the existing building on the campus into something that would wow anyone. It wanted a space that would engage students as soon as they stepped inside and offer a different way of learning to the traditional lecture theatre experience.

And, importantly, it was to become a resource not just for the Faculty, or the University, but the wider community in the surrounding Geelong area. The University prides itself on its campuses being large, rich assets for its community, with a range of spaces available for hire.

The first step was to construct a new extension to the pre-existing building. The Faculty knew that a 360° immersive room would form one part of the new extension. So, the idea of circular spaces was applied to the rest of the designs for the extension.

The extension took the form of three rooms:

- A 9.7-metre diameter round space - this would host an immersive environment, the Deakin Imaginarium
- A 9-metre diameter Think Tank - a space for critical discussions
- A smaller, semi-circular room - a high-end content editing suite

The idea was to create a space where students could move from one context to another - engaging in an immersive experience inside the Deakin Imaginarium and then stepping out into the round Think Tank to discuss what they'd just experienced.

To create this unique immersive room, the Faculty engaged the services of Igloo Vision.

It wasn't going to just be the inside of this space that we wanted to build, we wanted to build a whole feeling around this building. So, this is a precinct where it'll be a different learning experience for the students. From the moment they walk in the door, that experience begins."

Matthew McDonough, General Manager of Faculty of Arts and Education

Why Deakin was attracted to Shared VR

Taking the benefits of VR and sharing it among classes with Igloo immersive technology

From the outset of the project, the Faculty of Arts and Education knew it wanted to incorporate immersive technology into the curriculum. But it wanted a way to have groups share the experience, without the limitations of head-mounted VR devices that can create barriers between people. And, it wanted to remain one step ahead of other Universities across Australia.

So, Igloo Shared VR looked to be the ideal solution.

Sharing the experience
A key point for the Faculty was that sharing an immersive experience among a group meant that, as well as one's own reaction, students would see their fellow students' reactions too, and be able to respond accordingly. In this way, students can examine each others' reactions and begin to challenge their own views of the world.

A captivated audience
Teaching inside a 360° immersive environment offers a totally different alternative to the traditional lecture room experience. Students are captivated by the content being delivered for its entirety, rather than a short period of time, as they are literally surrounded by it.

New perspectives
One big appeal of this kind of immersive technology is the ability to revisit scenarios. Students can be immersed in a 360° video, step outside into the think tank to analyse it, then return to the Igloo to consider the video with fresh eyes.

Facilitating sessions for large groups
Deakin University specified a customised Igloo solution that can accommodate groups of around 30 to 35 people at a time - a 9.7-metre diameter cylinder, equipped with 360° projection, cinema-grade in-ceiling audio, acoustically-transparent vinyl screen, and PTZ cameras, along with a custom Igloo Lectern.

Future applications
The Faculty of Arts and Education already has a long list of opportunities and ideas on how the space can be used, not just for education, but for research that can help transform and improve the way the Faculty teaches. It is also looking into the possibilities for using the space for 'TED-style' talks, as well as utilising the Igloo as a virtual lecture theatre for remote teaching.

> *"We knew that an immersive environment really does make a huge difference for students when they're trying to learn something that is quite difficult or with difficult concepts. We know that immersive environments can solve this problem by taking them to places they would never otherwise go."*
>
> **Damian Blake, Head of School of Education, Faculty of Arts and Education**

How Shared VR is being utilised by the Faculty of Arts and Education

The Faculty has, in the initial stages, already found innovative uses for the Deakin Imaginarium:

Stimulating debate
The space provides a way to immerse students in a particular scenario or experience that forms the basis of a discussion.

For example, a 360° video transported students to Hosier Lane in Melbourne, providing a background against which they can discuss the distinctions between street art and graffiti. Having this debate in the immersive environment helps the students to examine what, in their own view, causes them to fall on one side of the other.

In another case, students could be transported to the Colosseum in Rome using Google Street View in 360°. The topic might be 'what sort of civilization would have a Colosseum?'. Then, using Google Street View once more, the students could travel to the centre of a football pitch, to try and understand what a Roman at the centre of the Colosseum might have felt.

We'll use the technology to provide immersive experiences that people can relate to and, in particular, experiences that they can share with others, and relate to. That's part of the power of this technology."

Damian Blake, Head of School of Education, Faculty of Arts and Education

Preparing pre-service teachers for the classroom
The Faculty has created 360° video content of primary school classrooms in action - for example, showing a teacher working with a group on reading, and other children working in groups without the teacher.

When shown inside the Deakin Imaginarium, student teachers have the opportunity to get experience of a classroom environment, where they have time to make observations they might otherwise miss when walking into a classroom for the first time. They can more easily take note of things like how the tables are laid out, and the impact this has on the students' learning. It acts as a primer before they go out on their professional experience.

This use of the immersive environment is especially powerful as it lets pre-service teachers see what they might otherwise miss or take for granted in a real-life teaching scenario. Or, once they have had the real-life experience, they can revisit it in the Igloo, reflect on the experience, and see it differently.

It helps our pre-service teachers, in particular, seeing the sort of dynamics that are happening in a classroom. We can take them into a classroom, see the group dynamics that are happening, how the furniture is arranged, see the sorts of things that you would otherwise miss when you're in the moment."

Damian Blake, Head of School of Education, Faculty of Arts and Education

Looking ahead

The Faculty anticipates a wide range of uses for the space across the rest of the University:

Journalism courses - as the journalism industry heads towards more immersive storytelling techniques, virtual and augmented reality will come into play, and the Igloo will be a key component of teaching these skills

Healthcare courses - students studying to become doctors and nurses can experience hospital wards through the use of 360° footage in the immersive room

Science, engineering and built environment - the space offers an environment to visualise various types of Building Information Modeling (BIM) and architecture designs within a shared 360° immersive space

Remote teaching - the Igloo installation has been upgraded for use as a virtual lecture theatre, including studio lighting and PTZ cameras, which will facilitate remote lectures and seminars

The potential for transforming pedagogy

Importantly, the Faculty sees the Deakin Imaginarium, when paired with the wider precinct, as providing an excellent basis for a new way of teaching and learning.

The Faculty has developed pedagogy around three phases: 'I see' and 'I feel' > 'I think' > 'I act'.

In this process, the immersive environment provides a way to immerse students in an experience that they 'see' and 'feel'. From there, students move into the Think Tank, where they take their shared experience into the 'I think' phase.

The key to the precinct is the ability for the students to move back and forth between the Igloo and Think Thank, to move from the immersive experience and to the focused, critical thinking experience.

These then lead to the 'I act' phase, or 'what are you going to do about it?'

That last stage is really important because it helps them to understand what they can do in the world to make a difference, and that's what education is all about. It's about learning, interacting with others, and making a difference to our world."

Damian Blake, Head of School of Education, Faculty of Arts and Education

Evaluating the impact

The 360° immersive environment has already made a lasting impression on the students and educators who have experienced it.

Impressions of the Deakin Imaginarium - a unique Igloo installation:

"Students who have come in so far have had the initial wow factor, it's a new experience and a new way for them to learn."

"It gives us a great sense of comfort and we're very proud when we see the first reaction of anyone who comes into the space. From the moment they step in the door, you can see their eyes light up, it's a wow factor, and so we've got their attention."

"How do people react when they come into the Igloo? They think it's brilliant. They love it. We bring them in and they stand for one or two seconds, they're just in awe, and just taking it all in."

"What's most impressive is the quality of the experience in this space. It's not grainy, it's very high-definition, the sound takes them there and immerses them fully. So with the integration of all those technologies between the quality of the image, the quality of the sound, it's a sense of theatre in itself and performance just by coming into the room."

Success of the Igloo:

"The immersive environment like the one we have here is brilliant because we can put the students in the same room, they can look around, freeze the frames, see things they didn't see before, see things that are hidden in plain sight, and that's when they start to learn."

"It is hard, sometimes, to explain to your academic how they may be able to transform their teaching in an environment like this. But, from the moment they step in through the door, a spark is lit in their minds, and they begin to imagine how they can use this great facility to enhance the delivery of their teaching."

"So the tools that are provided by Igloo have been really easy for us to use, Google Street View has been an amazing one. In some of the subjects, our staff have been taking students on a journey to different places in the world, to get an experience of their culture and their society and their learning. There's so much that's applicable to what we teach here at the University."

Comparison with traditional facilities:

"With traditional formats, you'll maybe capture the attention span of a student for a period of time, but we've witnessed already when students and participants come into this environment, they're captivated for the entirety of what we're delivering."

"Everyone learns in different ways. Some of the students have found they've picked up on concepts more quickly than they would have done in a more traditional teaching format."

"Once you've learned something, you often change your frame of reference and that's part of the very powerful thing this immersive technology can bring. You can look at a classroom, see it, then look at it again and see it differently."

Keys to success

At Igloo we have worked on many deployments of Shared VR technology. And we are always keen to advise customers (and also to learn from customers) about the factors that enable an Igloo to become an effective education tool. Some of the things we were impressed by at Deakin University include:

1

Integrating immersive technology into building designs

The Faculty used the idea of a 360° immersive space in its designs for the Geelong Waurn Ponds extension from the outset. This informed the construction of the two circular spaces (the Igloo and the Think Tank), alongside a semi-circular editing suite, with Igloo Vision providing consultation on designs. **The precinct as a whole is designed to build excitement for the immersive space as you walk towards it, before stepping inside the eye-opening centrepiece.**

2

A commitment to multiple use cases

The Deakin Imaginarium, while intended as a showpiece for the Faculty of Arts and Education, is available for use by students, staff, the wider University and the community as well. **Every department in the University has already come up with ways the technology can impact its teaching and its potential for use in research.**

3

Senior-level evangelists

From the outset, members of the Faculty, such as the Head of Education and the General Manager of the Faculty, knew they wanted to integrate immersive technology into the refurbishment, to create shared experiences. **They have been key in hosting senior staff and others from outside the University to help them understand the potential of the Igloo.**

4

Generating excitement and curiosity for the technology

To promote the new Deakin Imaginarium, the University hired a 6-metre Igloo cylinder for an open day in August 2019, in which it showed mini 360° trailers of the upcoming precinct. **In this way, the Faculty gave prospective students a glimpse of the facilities they could expect to use if they attended the University.**

5

Creating and refining content

The Faculty has been creating its own content, such as 360° footage, and has been using tools such as Google Street View to take students on virtual field trips to places they might never otherwise visit. **By creating its own content, and then testing this on students in the space, the Faculty is able to refine its creation techniques and learn what works best in the space and for the students.**

6

New perspectives on ways of teaching

The Faculty has already understood that Igloo technology can be instrumental in offering new ways of teaching and learning. The Igloo premise is that, when suitably immersed, user experiences, passive or active, are significantly enriched. When combined with the fact that Igloo's systems are a shared experience, rather than solitary in a headset, this adds the social element to the learning and it becomes deeply embedded. And, while we have plenty of anecdotal data on the success of immersive technology in learning, we have yet to see this formalised. **The Faculty of Arts and Humanities is taking this a step further by applying a comprehensive set of principles that can guide teaching and learning practice.**

Specifications of the Deakin Imaginarium

Creating a unique Shared VR installation as a precinct showpiece

The Deakin Imaginarium benefits from a range of cutting-edge features that creates a truly stand-out Igloo installation

- The Igloo is equipped with seven Epson laser projectors that, via the Igloo Warper application, form a seamlessly blended image, with minimal shadowing thanks to the UST periscope lenses.
- A separate, semi-circular editing suite houses the Igloo Immersive Media Player along with a Presentation Server. Four ultra-wide displays mimic the aspect ratio of the Igloo screen itself to assist in editing content.
- The Presentation Server includes a second GPU as a backup for the Media Player and can be used for video conferencing, video editing, PowerPoint editing and as a game server.
- The audio is cinema-grade, comprising TruAudio in-ceiling speakers and Pantages G3 amplifier for 5.1 audio. In addition, the screen is made of high-gain perforated acoustically-transparent vinyl.
- The installation features a custom Igloo Lectern which includes:
  - A touchscreen for controlling the Igloo
  - Swivel shelf for a laptop
  - USB extender for connecting a game controller, presentation clicker, wireless keyboard
  - HDBaseT receiver for receiving a mirrored copy of the Media Player's display
  - Birddog Mini HDMI to NDI converter for sending a laptop feed to Igloo Capture to display on the Igloo projection screen
  - Microphone for delivering lectures and talks
- In the wake of COVID-19, the University upgraded its installation with a video conferencing solution to facilitate remote lectures and teaching. This includes three PTZ cameras, a wide-angle Jabra PanaCast, two wireless microphones and two studio-grade LED lighting panels.

For more information

Igloo Vision is the Shared VR company

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
- University of Loughborough
- University of Essex
- University of Adelaide

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