Accessible Immersive Learning in Art and Design

an Erasmus Strategic Partnership

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Full Case Study Report

Digital Learning Spaces:
The exploration of Immersive web XR spaces as learning environments, including the creation and integration of discipline specific assets.

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This report is provided in full for the purpose of demonstrating the scope of the Accelerate project.

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Accelerate Project Case Study Report
The Illustration Programme at CCW, UAL & IADT

Completed Report / Jan 30, 2023
Authors / Darryl Clifton and Matthew Hawkins

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1. Synopsis

The overall objective of this Case Study was to explore accessible spaces for students and enable the ownership of personal learning spaces as a route to accessible learning, offering an alternative to the non-residential saturated spaces that staff and students can find challenging. This document sets out a range of practice base investigations designed to meet this objective in the context of immersive learning and the pedagogic principles of accessible and inclusive learning.

An experimental workflow was designed to navigate the many challenges encountered by staff and students when established practices coincide with emerging technologies. Accessible Learning Student Ambassadors (ALSAs) were recruited and guided through a series of aligned tasks designed to enable the creation of a personal immersive space. This process was recorded and evaluated to encourage continued discussions.

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2. An overview of partner institutions

2.1 University of the Arts London, Illustration Programme at CCW

The Illustration Programme at CCW comprises two undergraduate and one postgraduate course: BA (Hons) Illustration, Graduate Diploma in Illustration and MA Illustration. There are approximately 420 undergraduate students and between 100 and 230 MA students depending on the time of year. The MA runs for 45 weeks over 15 months and has a period of overlap in the winter term hence the periodic 'doubling up' of student numbers.

The Illustration Programme is oriented (pedagogically) vertically meaning that some activities and delivery are shared across the cohorts. The programme has developed several approaches to shared activity with aspects of curricular and non-curricular activity that involve students from multiple year groups and courses. Broadly speaking the underlying narrative of the Programme is to enable students to move from a disciplinary to a Trans-disciplinary practice. In practice this means that the trajectory of the BA is one of developing discipline specific skills in the first year, methods of interdisciplinary practice in the 2nd year and trans-disciplinary approaches in the 3rd year. The MA course adopts a similar but level specific approach with a focus on the development of an expanded practice-led methodology. The Graduate Diploma has a slightly different remit as its function is to enable students with a degree award in another discipline to transition effectively to postgraduate study in Illustration.

Technologies, processes and skills are offered to support the development of individual practices as opposed to an insistence instrumentalised training. Students on the programme have access to in-studio 'maker spaces' that facilitate clay fabrication, relief, reduction and off-set printmaking, 3D printing, 3D digital design and drawing, animation, physical computing, VR, AR, photography and moving image making.

Printmaking workshop, Camberwell College of Art, UAL, 2022

Example of technical provision integrated into studio environment. Camberwell College of Art, UAL, 2022

Staff engaged in VR training in the studio. Camberwell College of Art, UAL, 2022

2.2 IADT Dún Laoghaire: Institute of Art, Design and Technology

The Dun Laoghaire Institute of Art, Design and Technology (IADT) was established as an autonomous higher education institution on April 1, 1997, while the former DunLaoghaire College of Art and Design became the School of Creative Arts as part of the entire institution. With the focus on art and design, IADT proved to be a leading institution in higher education specialising in providing practical experience in teaching digital media, arts, and entrepreneurship. In 2012, its three existing schools were amalgamated to become two Faculties: the Faculty of Enterprise + Humanities, and the Faculty of Film, Art + Creative Technologies, incorporating the National Film School.

3D Design Model Making & Digital Art at IADT

3D Design Model Making & Digital Art is a four year, level 8, BA (Hons) programme of study. It provides three equally valuable areas of study; students learn the techniques and understanding required to make a career in the modelmaking industry, and a variety of culture industry practices. Graduates design and create 3D and digital representations of ideas and concepts in a variety of contexts such as film, gaming, architecture, exhibitions and street theatre. Many graduates from the course are now heads of department and employers in their own right, and the programme has had a significant impact on the television film and theatre industries in Ireland due to the quality of the graduates.

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3. An Introduction to the Case Study Pairing

UAL were paired with IADT as it seemed a logical match. UAL's emphasis on forms of pedagogy that focus on conceptual and transdisciplinary practices were complemented by IADT's approach that placed greater emphasis on technical instruction and enabling a substantive knowledge base to produce work in specific digital environments to a professional level. The Illustration Programme at UAL has been developing approaches to teaching and learning in Web XR and Virtual environments for the past 18 months via the VR R&D group. The focus has been on enabling students and staff to access 3D model making software and translate these assets via Blender for use in collaborative environments like Frame VR, Mozilla hubs and Spatial. We opted to concentrate on a workflow that ended with a shared experience in Frame VR. Some of the significant challenges that we were faced with related to regular (sometimes weekly) updates to software and the tendency for the platform technology to evolve rapidly. Cognisance of this propensity for quick change was something that needed to be developed during this process and influenced the development of the guidance document described below (see Appendix 7.0)

Following discussion with colleagues, initial emphasis was placed on the creation and integration of discipline specific 3D assets appropriate to web XR and online immersive experiences. As the study developed the focus shifted towards the exploration of bespoke spaces for a range of learning needs and how any assets might enable more personal and discipline specific experiences.

The objectives for the development of teaching and learning resources were determined as a result of these decisions.

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4. Case Study Pairing Aims

Context: UAL had initially established a series of aims that explored accessibility, feasibility of implementation into curriculum including access to resources, and the potential upscaling of activity to meet the demand of large cohorts. These key questions had been established prior to the first partnership discussion with IADT and were based on perceived requirements that emerged through testing the VR and Immersive technology workflows with several different UAL student and staff groups. Ostensibly the sessions aimed to define the tasks required to be undertaken, technical and pedagogic, to enable a small group of learners to 'on-board' with modern technology, familiarise themselves with the basics of software and navigate multiple online platforms. Specifically, we wanted to get students to create their own VR environment in FrameVR populated with assets created in Gravity

Sketch. Understanding the pedagogic implications of this aim, and the sometimes complex, interpolative relationship between proprietary software, like Gravity Sketch and Frame VR, have formed the foundation for the experiential learning workshops that we have undertaken with staff and students. Aims for the project were further developed as part of the London training event on 7 June 2022. An initial workshopping exercise that yielded insights into collective aspirations for the case study process was undertaken. Results of this short exercise were captured on a Padlet. (See Appendix 1.0)

The aims (UAL's perspective) were derived from the experiences of transitioning to online and blended Learning and Teaching models due to the pandemic and, more specifically, approaches to the development and evaluation of those learning experiences. This is evidenced through the transition that we made to teaching drawing (Drawing Lab), successfully utilising platforms like Padlet. (See Appendix 2.0)

There is a need to understand whether we have a shared objective for learners in that immersive space *or* if we are looking, more generally, at the dynamics and practicalities of being in that space as teachers and students? In other words, are our objectives driven by a desire to understand the pedagogic implications of working in a virtual space or how to teach the use of VR and immersive technology specific software.
Are we:

- Considering ways of navigating and 'being' in that space?
- Thinking about what the potential barriers to access might be?
- Understanding what contingencies are required to ensure fair and equitable access?
- Developing responses to one/all of these fundamental questions?

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5. Overview of Methodology

The following methods were deployed at UAL to deliver the stated aims of the case study:

- ALSAs were recruited in order to test several designed and iterated practical VR and immersive technology-based workshops known as workflows. The modes of engagement anticipated were action research, live practical experimentation, critical feedback and reflection on practice/pedagogy.
- Workflow design used a staged process to ensure adequate reflection and iteration time with regular feedback from participants to ensure currency and relevance.
- Focus Groups with ALSAs were staged periodically to evaluate learning, the design of sessions and to collect general feedback.
- Virtual learning spaces were developed to further test accessibility principles and the efficacy of the workflow. Formal and informal feedback loops were established to ensure co-design principles.

5.1 Methods

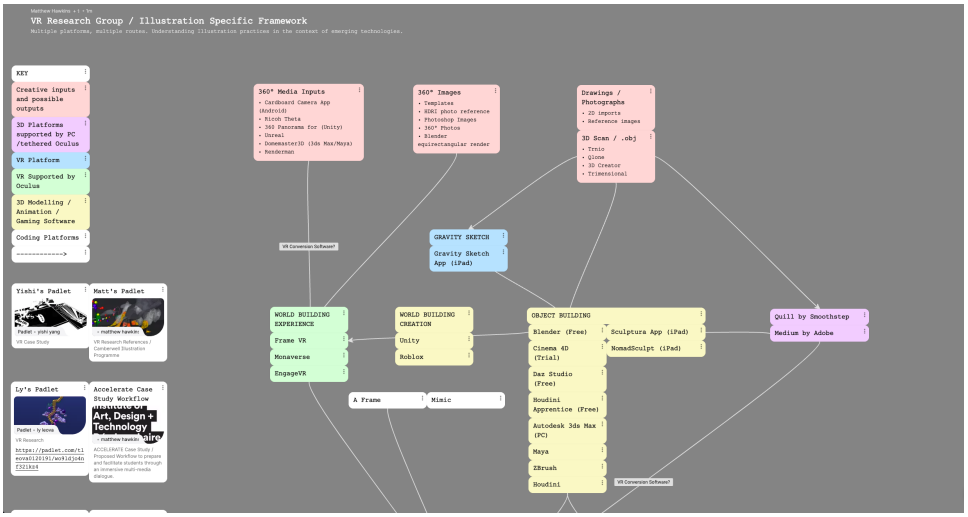
Recruitment of ALSAs

A job description was created and advertised via Artstemps. This was an open call to all students at University of the Arts London.
(https://www.arts.ac.uk/students/student-careers/arts-temps)
Initial recruitment generated a large number of applications (80+) and it took a significant amount of time for staff to complete the recruitment process. Of the application <10 met the requirements of the role. The original cohort participated in stages 0-2b.

A second cohort was recruited to complete the later stages of the workflow (stages 3-4) and an updated advert included a more thorough description of the Accelerate Project background and the expectations that would be placed on applicants. The number of applications was reduced, with applicants being more suitable as a result. This is described fully in the Job Description (Appendix 4.0). Participating ALSAs were from multiple courses at UAL.

Design of UAL workflow/workshops

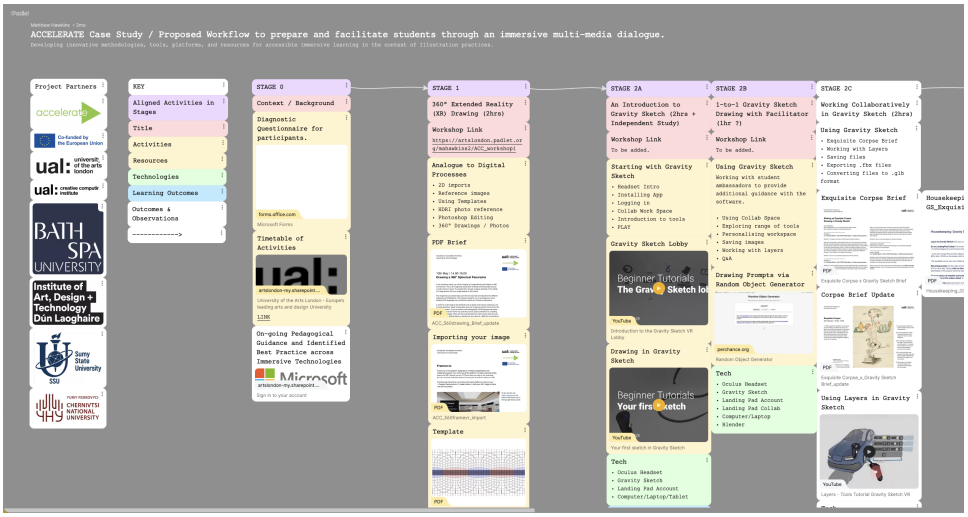
It was determined that proposed workflows would need to first establish digital foundations that would feed into our intended outcome: the exploration of viable web XR space(s) that could be designed, built and populated by students —ultimately, a space in which students are comfortable working in and have autonomy over and which allows for a significant degree of control. Any workshops would need to effectively transition students from their more confident analogue illustration practice(s) towards these digital space(s). To further understand the relationship between analogue and digital illustration practices a diagram mapping the current ecosystem was created on Padlet:



Screenshot of a diagram mapping the current illustration specific ecosystem of available technologies.
https://artslondon.padlet.org/mahawkins2/XRtech_map

Building upon existing knowledge and partnerships FrameVR was selected as the 3D web platform that would provide appropriate levels of accessibility for those less familiar with technology. FrameVR allows for the integration of specific assets that contribute to the creation of an online 3D web environment. It was determined that these assets should provide the focus for workshops and bring us closer to our intended outcome – a number of digital learning spaces built by students.

Key FrameVR assets include images, web links, text, audio, pdfs, video and 3D models. Of note, the 360° image and 3D Model (Gravity Sketch drawing & 3D scanning) represented the best opportunity for practices to transition from analogue to digital. The results were a series of aligned activities documented in the workflow diagram below:



Screenshot of the proposed workflow to prepare and facilitate students through an immersive multimedia dialogue
https://artslondon.padlet.org/mahawkins2/accelerateILL

Workshops and Testing

UAL Workshops – Four stages of delivery were determined. Each stage would incorporate 1-2 contact points. The forms of contact included presentations, discussions, workshop activities, demonstrations and 1-to-1 meetings. Each contact point built on the knowledge and skills of the previous session, enabling the creation of a digital toolbox to build immersive web XR spaces. It was necessary for workshops to be delivered online and in-person at the same time to provide appropriate access to accommodate the diverse needs of the cohort. Microsoft Teams provided the primary mode of delivery for these contact points. In workshops online students were determined to be the primary audience. This meant hosting and recording sessions online whilst projecting the session in real-time in the physical space. Any questions and/or discussions were facilitated by staff to integrate both online and in-person participants.

List of planned workshops (both completed, and proposed)

Stage 0 - Diagnostic Questionnaire for ALSA participants (completed)

Stage 1- 360° Extended Reality (XR) Drawing Brief (2hrs - completed) (Appendix 8.0)

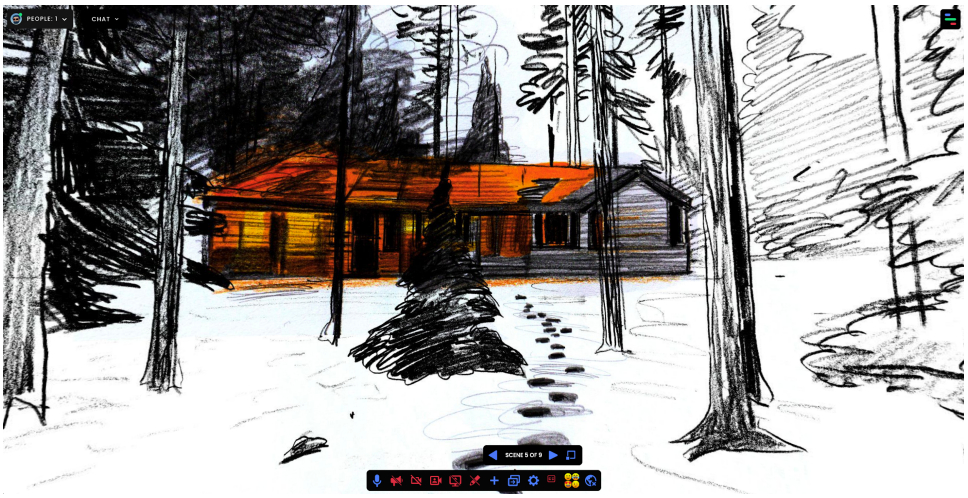


Image 5.1a / working example taken from the 360° Extended Reality drawing brief by Matthew Hawkins

Stage 2

2a. An Introduction to Gravity Sketch (2+hrs - completed)

LINK to recording

Image 5.1b / An introductory session with the Gravity Sketch Team.

2b. 1 to 1 Gravity Sketch Drawing with Facilitator (1hr - proposed)

2c. Exquisite Corpse in Gravity Sketch (2hrs - completed for staff training)

This was delivered to academic participants as part of the London training. LINK to recording

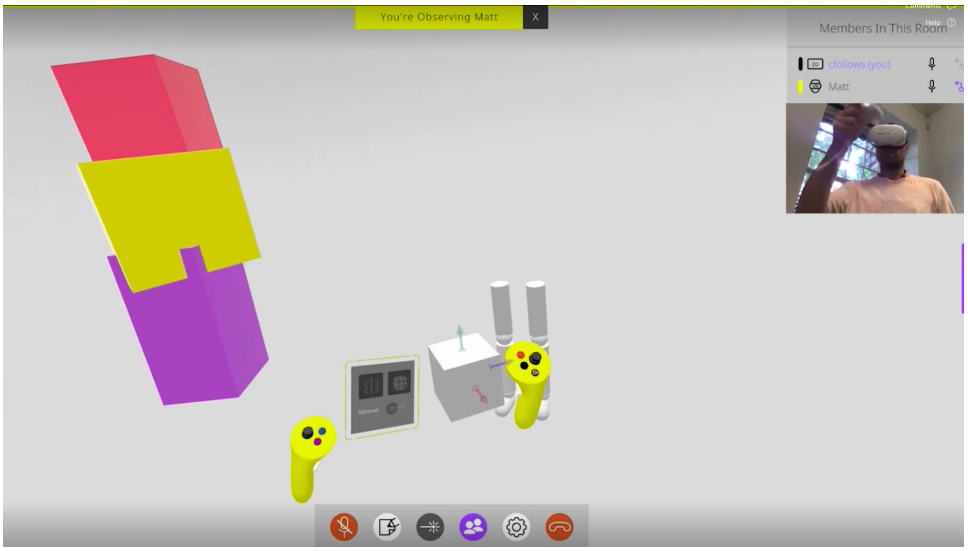


Image 5.1c / Screen shot from the Exquisite Corpse drawing activity.

Stage 3 Introduction to FrameVR and related assets

https://drive.google.com/file/d/1VuyuUdc7YK0s1QKdi1wbhV-17WseBiLr/view
Introduction to control spaces
https://framevr.io/acctest (Images 5.1d & 5.1f)
https://framevr.io/acctestdesk
https://framevr.io/acctestalternative

Discussions about what ALSAs might want from a learning space
Planning and creation of personal FrameVR Studio/Tutorial Space
(1 hrs + 2 hrs working independently - completed)

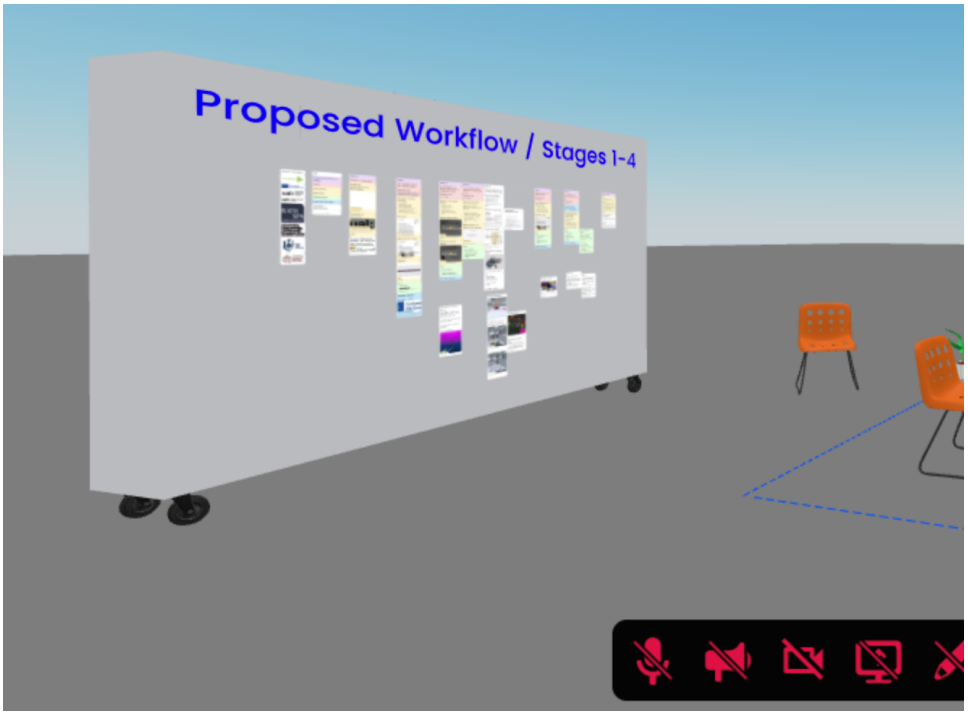


Image 5.1d /Accelerate Padlet workflow built into a FrameVR 'control' space

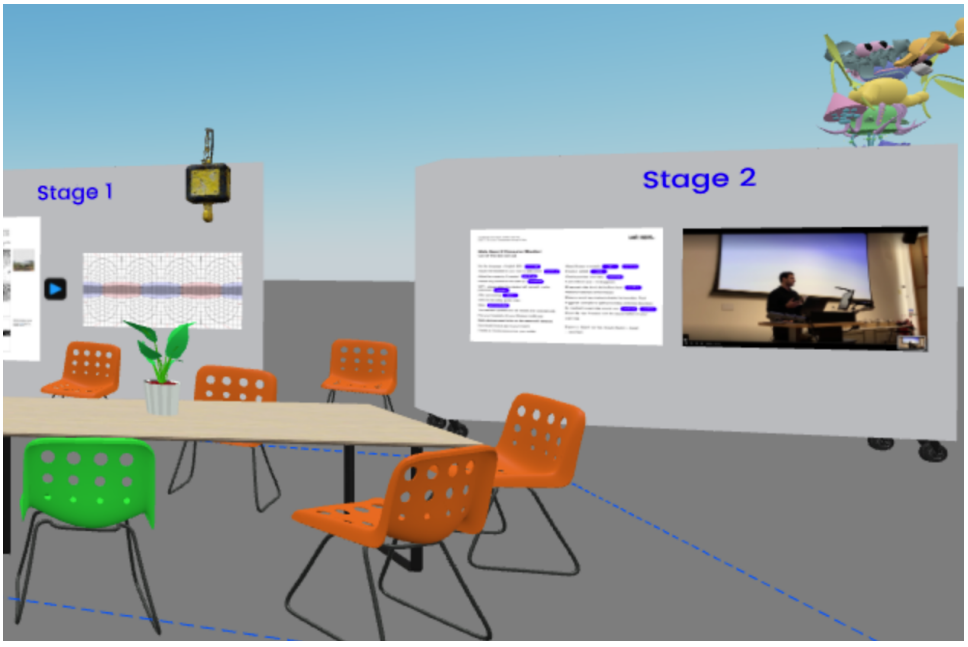


Image 5.1e / FrameVR 'control' space replicates aspects of familiar studio spaces

Stage 4

A group meeting in personal FrameVR spaces with introductions and tours
Collection of ALSA feedback (1hr - completed)

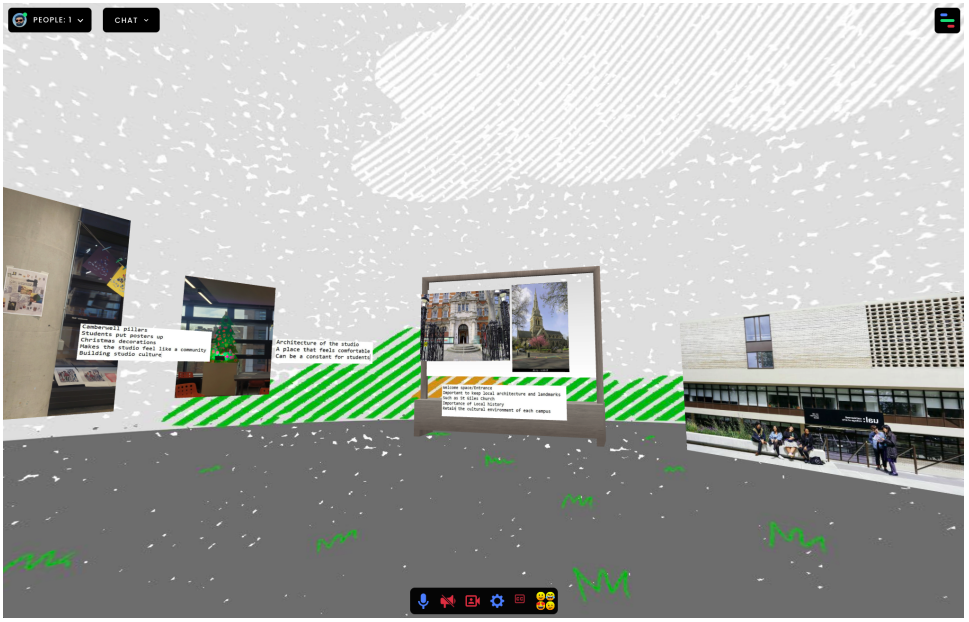


Image 5.1f /ALSA designed Tutorial Space

Focus Groups

After both stages 1 & 2, a focus group was held with the ALSAs to evaluate the session and collect feedback. Focus groups were scheduled 3 working days after each activity to allow students to reflect and develop any ideas. Significant feedback was collected at this point and can be found in the following section, 6.1 ALSA thoughts and feedback > Stage 2.

During stages 3 & 4 feedback and reflections were gathered at the end of each session and at the beginning of the following session in response to any independent activities. Responses can be found in the following section, 6.1 ALSA thoughts and feedback > Stage 3 & 4.

Headset access and workflow implications

During stages 1 and 2 students were provided access to Quest headsets, and introductions to the technology were given at the beginning of each session. The intention was to provide headsets to students on completion of workshop 2a for personal use enabling the independent development of relevant skills and knowledge. Due to a range of factors (student engagement, limited headsets, hardware value, academic timing) the decision was taken for the headsets to remain on-site and access to be provided during Accelerate workshops sessions. These factors likely impacted the overall experience and the capacity of students to participate.

Workshop scheduling

Note that recruitment was challenging (see 5.1 Recruitment of ALSAs) and maintaining engagement was also equally challenging. We understood the main reason for this to be the time of year. The events took place at the end of the academic year which proved

challenging for several ambassadors as they were preparing for final submissions and assessment. More nuanced and individual reasons for diminishing engagement may be found in the student feedback.

Two 'control' learning spaces were developed (and shared with partner institutions) to use as examples: a studio environment that provided continuity with established physical spaces and an individual tutorial space modelled on a more traditional residential desk model. An alternative learning space was also shown to encourage Accessible Learning Student Ambassadors (ALSAs) to explore a wide range of possibilities. ALSAs were invited to respond to the spaces by designing and building FrameVR spaces relevant to personal practice(s) and discipline requirements.

The measure of success would be a. the completion of this task and b. the qualitative analysis of the learning.

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6. Staff/Student Experiences

Outcomes and evidence

Each stage of the methodology prompted outcomes and feedback, these were collected in sessions and/or subsequent focus groups. The following list itemises individual outputs alongside the thoughts and feedback of staff and students.

Timetable of activities and related Focus Groups

6.1 ALSA thoughts and feedback

Stage 0

Introductory Meeting Transcript (Appendix 5.0)
Diagnostic Questionnaires (Confidential documents)
Focus Group Feedback (Appendix 6.0)

Stage 1

360° Extended Reality (XR) Drawing

Stage 2

2a. An Introduction to Gravity Sketch

The meeting with Gravity Sketch on 27th May was significant, as the ALSAs helped us identify the need for better on-boarding. Current practices demonstrated in Gravity Sketch's onboarding introductions assumed audiences already had a significant knowledge of

technologies and related terminology. Staff and ALSAs spent the whole session focusing on how we communicate and learn how to use the controllers - terminology left/right - dominant hand - drawing hand. The Gravity Sketch Team developed a visual diagram as a means of instruction.

ALSA / Thoughts and feedback Stages 1 & 2
(ALSA 1 Document LINK)
(ALSA 2 Document LINK)
(ALSA 3 Document LINK)
(ALSA 4 Document LINK)

2b. 1-2-1 Gravity Sketch Training (proposed / not completed)
2c. Exquisite Corpse in Gravity Sketch LINK to recording

Stage 3 Meeting notes

ALSA / Preparatory thoughts and feedback
Online spaces should provide a comfortable and welcoming atmosphere and be able to talk freely. First impressions that are relatable to physical space aid the transition. A more formal zone or space is appropriate in some instances.

Any space would and should be able to accommodate different kinds of work: ideally a multi-functional space that should be easily adaptable, not a stagnant space that we see in some of the templates. It is interesting that you could move between notions of inside and outside.

A busy space is preferable, and this can help overcome the space issues experienced in physical spaces, something that can have a detrimental impact on the work.

Specific voice zones are helpful, but it is important to have context. It is important to see what is happening in the background. Students won't want to feel isolated, and this can be overcome by having activities going on in the background.

ALSA / Summary thoughts and feedback
Current space templates are very specific, and preference would be to enter environments that are more reflective of college experiences. Preference for templates reflecting a range of UAL spaces rather than generic third-party spaces. Could other work be contained in spaces?

The potential to have fewer formal spaces is attractive, for example the natural world might counter urban settings/locations. Privacy is a concern and further acknowledgment of

multiple users is necessary.

Stage 4

Meeting Recording LINK

ALSA / Feedback summary & Tutorial Space Responses

Space designed according to course experiences. Good to have a map at the start, to enable ease of navigation. How could this be developed? Wayfinding system, green line at Moorfields Eye Hospital as reference.

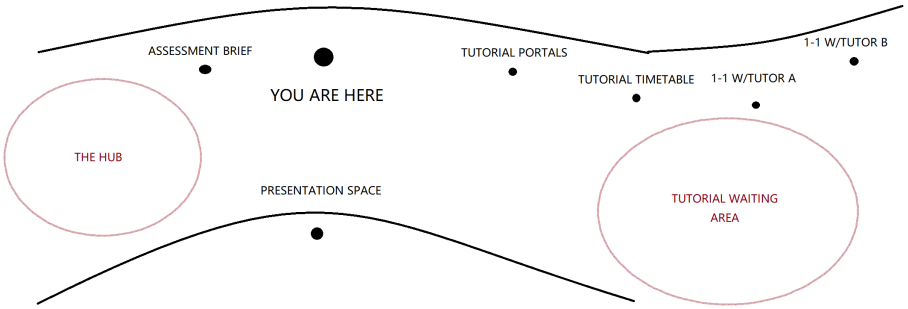


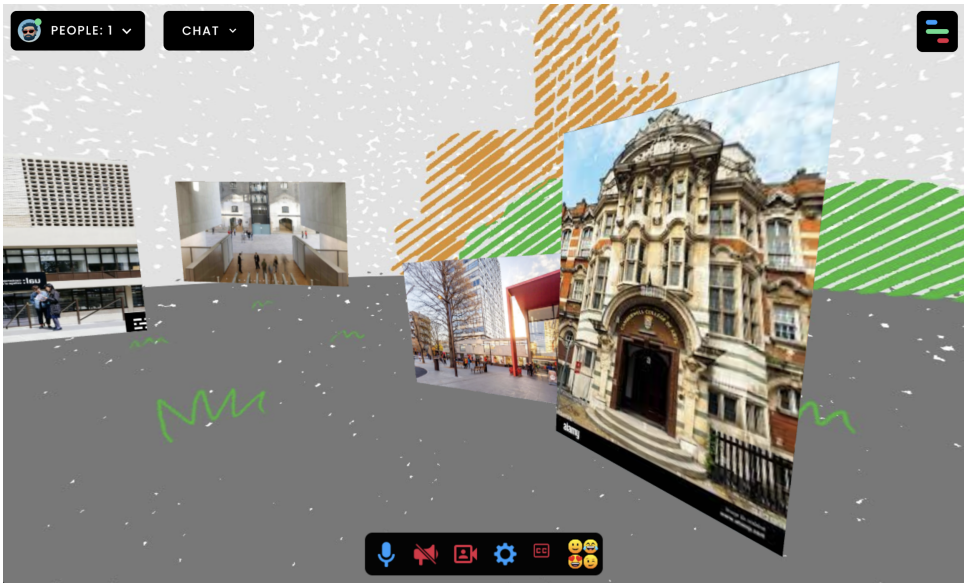
Image 6.1a / Map of proposed studio space

This solution created a hybrid version of existing studio space. Some of the existing furniture/assets are distracting. Could there be alternatives to the Star Trek portal, a door? Text can be problematic, small and difficult to read. As it stands written content does not translate particularly well into these digital spaces.

Image 6.1b / ALSA FrameVR personal tutorial space

It was difficult to create separate rooms as a result and this creates problems when it comes to privacy. This is important, especially in an open space. How could this be guaranteed? Example Tutorial VR space: https://framevr.io/tutorial-space-jessie

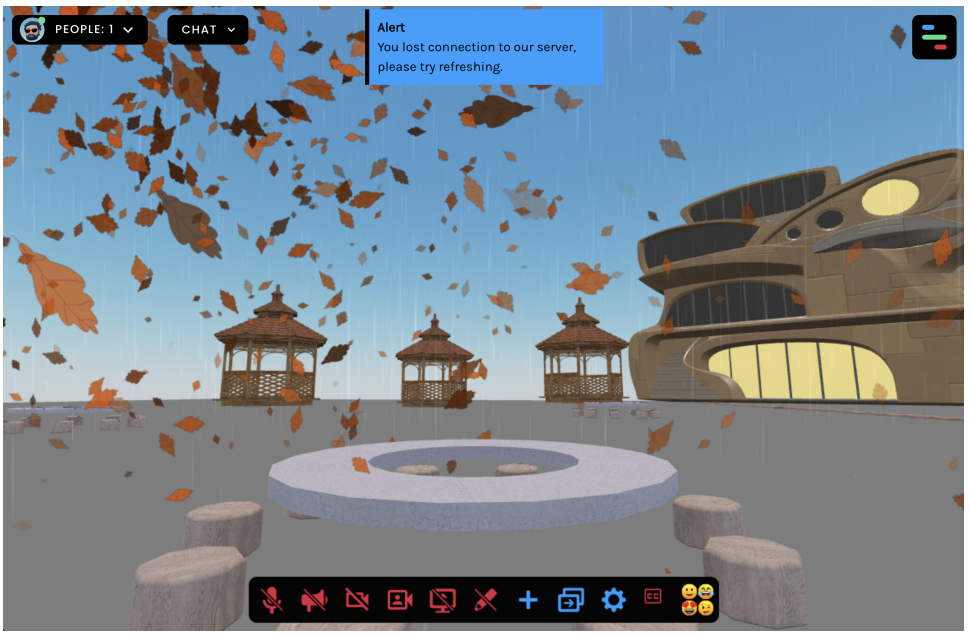
Group briefing space and college architectural reference. Reflection of the physical space, relationship between the inside and outside should also be acknowledged. Outcome combines these aspects with an illustrative approach and this potential for customisation is important. An additional outdoor space would be preferable.



ALSA FrameVR personal space integrating existing architectural features
https://framevr.io/virtualstudio

It is not currently possible to control, with any certainty, the view of visitors to the frame. This could be a problem when entering a learning space and could create initial uncertainty and/or confusion. More control over spawn spot.

Interesting when the space reflects the ideas and concepts in the work. People already in the space made it more accessible. Discipline specific spaces and or assets. How can these crossover?



ALSA FrameVR personal tutorial space
https://framevr.io/tutorialssss

I feel what's important for a space that people can jump into remotely is that the user feels like they are part of an ecosystem, in a classroom full of painters looking around at painters and paintings is inspiring, it makes us feel like we are part of something, this is the same for most art practices I would guess, especially it is the case for theatre. In order to share these spaces with others whilst also not talking over and bleeding into other conversations I think proximity chat and the voice zones are the best feature in all frame spaces. It's like having headphones on, it means you can get on in your own corner of the digital world you inhabit. This feature also allows tutors to pop in and talk again privately, 1-2-1 , in groups, or even aloud if they are say recording themselves as of yet there is no way to record thoughts in the environment which leads me to my next point whiteboards feel a bit tacked on, like something to doodle on however I would suggest (maybe even for Mimic, the CCI bespoke designed space) that when you enter alt space users get a notebook that works in a similar way that which can be written on and is private until shared. Instead of the white board we could then have a slide projector that lets other users see what has been written down. This feature could even then be used to project designs for the environment. I'm thinking theatre light projections, it also feels with the vintage made modern atheistic evidenced by the white board

I like the microphone feature, that lets a speaker override the voice zones (I believe, needs checking) but does allow for all users to hear what is being said by one person, it does feel grand and make users more alert, this would especially be useful within lecture and performance experiences.

I am undecided about the low poly nature of the world, it looks a lot like the metaverse

Facebook showed off that was met with mockery and it is still a valid point, we live in a time of ai generated art and amazing 3d tools like unreal engine and although I'm not suggesting we crash a computer that doesn't have the graphics card I think it would quickly get irksome to constantly enter a world that doesn't really reflect our reality. To be debated, I actually funny enough care less about this when entered in through vr.

I like the preset worlds, I would like world building tools rather than just the ability to add things, I speak above of tools like unreal engine and knowing that's not a possibility but imagine just being able to change the landscape, combined with a 360 art piece would create one hell of an experience, a new kind of art that we only touched on last year with the cohort in that singular 360 drawing workshop, would love to combine the two in a workshop.

ALSA FrameVR personal tutorial/theatre space
https://framevr.io/jacktheatre2023

Additional notes can be found in the individual student Frames (see urls).

6.2 Staff thoughts and feedback

General thoughts and feedback

Most of the digital platforms required a degree of digital proficiency and it should be noted that the ALSAs were comfortable in these spaces. The case study did not work with students with little or no technical proficiency or those that were simply disinterested in learning in these spaces. Results and feedback may have differed if this was the case. It should be noted that within general cohorts it will be likely that some students will be reluctant or unwilling to enter these spaces. This is something that should be given greater consideration going

forward and a change in basic assumptions may be required in some educational environments.

The 4 workflow stages were designed to introduce a range of technologies and build up student confidence and skill levels, this alignment proved to be successful and helped to enable the production of more accomplished environments. In attempting to do so sessions crammed content delivery, discussion, and feedback into a short space of time. Whilst this enabled many of the findings in this report it provided less opportunity for the ALSAs to organically navigate digital platforms. The opportunity to do so would provide additional information that could prove valuable.

FrameVR Environments

General, rather than specific, guidance was provided for the intended use of the online learning environments – for example, a tutorial space to host conversation with a peer and tutor. As a result, some feedback lacks specificity in relation to any activities that may be delivered in online spaces.

It is advisable that immersive environments should not be explored or designed in isolation, purpose and intentions need to be set out from the start. Any intended use would be subject specific. On identifying proposed usage, it could be advisable to employ the skills and expertise of those more familiar with spatial design and interactive to elevate the effectiveness of any spaces.

In FrameVR file size limits, assets and environment options are currently limited. Students were creating spaces for the case study rather than a reflection of academic interests or for presentations purposes. This enabled students to construct spaces without any sense of creative burden. The introduction of these factors might create a distinct set of results, and this may need further consideration/exploration.

The ALSAs highlighted concerns with privacy and levels of control over who and how any attendees might participate in activities. It was not always clear to users who was in the space or where they might be. In some instances, ALSAs reported unknown individuals being present in spaces which represents a significant problem. As teaching has transitioned into online teaching spaces over the last two years staff on the Illustration Programme at CCW have raised concerns about being alone in digital spaces with students. The same applies to FrameVR and will need to be considered in any session planning. Recording individual sessions may not be a viable solution.

Overall, the pace of student development exceeded expectations, and this can be attributed to the accessibility of the selected technologies. How can any platforms developed by

institutions replicate platforms that have seen significant resources over sustained periods of time?

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7. Summary of successes and problem/s

7.1 Successes

ALSA recruitment and payment
An early decision was made by UAL to use internal funds to pay the ALSAs. Individuals were selected from an open call by UAL's creative recruitment agency, UAL Arts Temps. Prior to the call out, feedback indicated that prospective participants were often asked to contribute to projects. It was not always clear how their input would be used or actioned and this fostered the idea that any involvement could be a box-ticking exercise. The commitment to payment helped to provide clarity to the role, with ALSAs brought on board as paid consultants. Engagement was good across the case study activities and feedback from students expressed satisfaction at the transparency of the role and the subsequent impact that ALSA feedback appeared to be having.

Guidance for immersive technologies (Appendix 7.0)
Following the successful delivery of several workshops including the 'Volume Jockey' project undertaken with the Association of Illustrators and 5 professional practitioners (Appendix 10) comprehensive guidance for the development, delivery and evaluation of learning experiences in virtual immersive environments was produced. The guidance was authored by Dr Katie Gardner (UAL), in collaboration with other members of the Illustration Programme VR and Immersive tech. Research and Development group, it offered a framework for the development of all subsequent Teaching and Learning activity. The guidance has a specific focus on accessibility and offers protocols for the development of learning experiences with this in mind.

The thoughts and feedback collected from the ALSAs was significant and underlined the decision to enter into a thorough recruitment process and the payment of participants. Of particular note was An Autistic Perspective, a short piece of writing about digital learning in a post-pandemic landscape. (ALSA 2 Document LINK)

The four workflow stages were designed to introduce a range of technologies and build up student confidence and skill levels. This approach had previously been tested on the Illustration programme at CCW to bridge the gap between established analogue practices and emerging technologies. This alignment works well again here.

Gravity Sketch

The understanding and recognition of scale within ecosystem platforms was especially important. Realisation of such collaborative working, most notably in Gravity Sketch, is more accessible, less disorientating, and easier for participants to communicate (Appendix 7.0 / Application specific > Gravity Sketch: Collab Space Guidance).

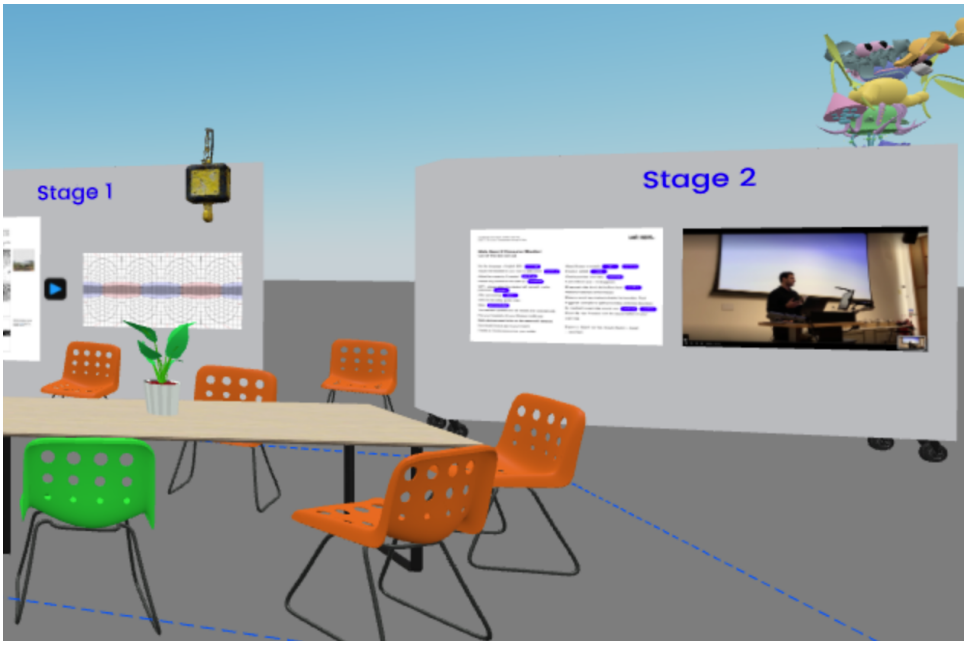
Experiences in Gravity Sketch also necessitated personalisation of avatars and limits to the number of participants. After numerous sessions, the optimum number of 4 was confirmed along with the need to assign specific roles to participants allowing for a more productive experience. Preliminary role titles included instructor, learner, observer, and recorder.

As mentioned in 6.1 ALSA thoughts and feedback > Stage 2 > 2a. An Introduction to Gravity Sketch, our initial meeting produced significant results. Current onboarding practices assumed audiences already had a significant knowledge of technologies and related terminology. Staff and ALSAs spent the whole session focusing on how we communicate and learn to improve future use and teaching practices. Notably, how to use the controllers – subsequent terminology (left/right - dominant hand - drawing hand). The Gravity Sketch Team developed a visual diagram as a means of instruction.

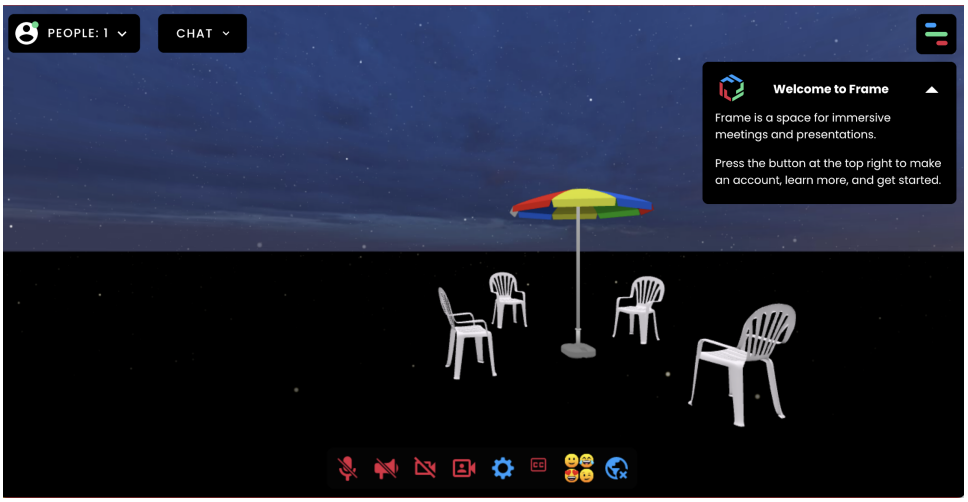
FrameVR

Two 'control' virtual meeting spaces have been developed to enable remote discussion between case study partners while at the same time beta-testing some of the teaching and learning approaches that have been developed by UAL. A decision was made to integrate the process document that described the workflow housed on a Padlet into a virtual environment built by Matthew Hawkins (UAL) and hosted in FrameVR. The Virtual space describes a meeting room with several tables and chairs, emulating a conventional studio environment. The seating area is surrounded by mobile panels that echo the furniture used in the studio environment at Camberwell college. Virtually 'pasted' onto each of these panels is written and visual information extracted from the workflow document on Padlet. This includes text, images and moving image. The space also contains several 3D models that act as examples of the workflow described in the documentation held on the mobile panels. This environment is designed to enable virtually situated discussion about the efficacy of the workflow that has been developed and trialled. It also enabled the case study partners, UAL and IADT to draw comparisons between approaches and actively learn from one another. The principles outlined in the guidance documentation (Appendix 7.0) have been deployed in the construction of the space and the preparation for engagement, further illustrating and embedding some of the learning that has taken place through this process.

Please refer to **5.1 Methods** > List of planned workshops (both completed and proposed) > **Stage 3.**



'Control' Virtual Meeting space



Alternative meeting space developed for partner organisations and ALSAs

The necessity to work in FrameVR introduced multiple asset possibilities and this encouraged students to work across digital platforms and technologies utilising many of the skills already in their possession. It also drove students to explore less familiar territory and possibility (Gravity Sketch, Blender and 3D Scanning Apps). Platform imposed restrictions took emphasis away from the crafting of outcomes and this benefitted most participants. A can-do approach was fostered from the easily accessible interface, further enabling focus on discussions and feedback.

FrameVR contributed significantly to the overall success of the student's outcomes/spaces. Accessibility of the platform enabled each student to create personalised environments at speed with minimal technical knowledge/skills. The platform also provided additional

options for customization as skills and knowledge developed.

7.2 Problems

ALSA engagement

ALSA engagement varied despite the thorough recruitment process. In the first cohort accessibility issues impacted and a number of participants were unable to continue. In most cases participation/attendance was reflective of existing cohorts and highlighted how issues can span traditional and digital spaces. Activities were extra-curricular and participation in the case study occasionally came second to course commitments and/or part-time work. ALSAs noted challenges to meeting in groups and face to face.

Technical Concerns

Technical problems were encountered and often persisted. Notably password issues blighted onboarding and set-ups (in group activities particularly). Multiple technologies often require different passwords, and it can be challenging to track all passwords. Clear guidance was often provided and can be found in the Guidance for Immersive Technologies (Appendix 7.0), but often the excitement of putting on a headset and entering an immersive space led to students overlooking the more fundamental necessities of set-up and cause later problems. For example, overseas students often set-up headsets in native languages which created issues for staff when trying to explain the interface or problem-solve.

There is a notable difference between the Oculus Quest 2 Business Headsets and the Meta Quest Consumer Headsets. Business headsets are the most accessible option for workshops and when working with students who have no prior experience of immersive technologies. Oculus Quest Business Headsets have since been discontinued leaving the Meta Quest Consumer Headsets as the most cost-effective model from this manufacturer. This asserts the necessity for students to have individual headsets and set them up as personal devices. This relies on students being technically able to do so and additional technical support may be necessary prior to any session during the onboarding process. Larger cohorts make both access and support more challenging.

Battery life can be a problem in extended activities, although this is countered by the recommended usage times (Appendix 7.0). As with other technical devices battery life appears to reduce over the lifespan of any device. Other technical issues have become more persistent with time and have required a greater input from staff to solve. Questions remain as to whether consumer models are built to withstand the handling of multiple users and the demands of student use. Technological advances mean hardware can become outdated/redundant, as we have seen with the Oculus Quest 2 Business Headsets, and this may deter the considerable investment necessary to expand learning opportunities.

Within programmes it is necessary that alignment between IT/technical support and teaching staff will be necessary. This will need to include synchronisation of access, loan monitoring and maintenance/software updates. It is questionable as to whether the entire responsibility should be placed on individual academic staff.

General Data Protection Regulation (GDPR) needs to be considered when students are using Quest headsets as personal devices. Students will need to log in to personal/social media accounts for use and then must Factory Reset the device on loan return. Failure to do so will provide access to personal information for any future user(s).

As with any new processes/skills proficiency requires a significant commitment and a willingness to embrace and learn new skills. Assumptions about technology persist and strategies may be necessary to overcome any bias.

Workshops and Activities

Initial onboarding sessions have all been delivered in-person and it is yet to be seen how this technology could be introduced remotely. To do so would put emphasis on the student to problem solve and work independently.

In-person onboarding workshops have proved to be staff heavy as both staff and students familiarise themselves with the technology. If any problems are encountered staff attention is drawn away from the group and students are then required to work independently. If any workshop(s) requires headset demonstrations or casting it is helpful to have another member of staff to support the students. A staffing team of at least 2 covering both academic and technical concerns is recommended.

Engagement in digital spaces varied from one student to another. Students may be able to adopt the role of the spectator over the participant more easily than in a physical space where involvement can be more easily monitored. Whilst this anonymity might benefit some students it is likely to disadvantage others.

Structured breaks are necessary and recommended at regular intervals in Guidance for Immersive Technologies (Appendix 7.0). These breaks need to be factored into any planning. Breaks reduce the overall length of any planned session and can be disruptive for any ongoing/prolonged tasks.

Staffing consistency and continuity is beneficial but puts additional pressure on specific members of staff tasked with delivery. A more holistic approach, within specific departments or programmes, requires additional staff training and a willingness in staff teams to embrace emerging technologies. For effective learning staffing training needs to keep up to date with

the pace of technological change and will likely need to be scheduled regularly.

General

Visual disciplines may determine a preoccupation with the visual design of immersive environments over more important considerations, notably how and what the space is used for (unless this was clearly established beforehand).

The case study was heavily reliant on a small number of apps/platforms.

The integration of multiple web XR platforms may have led to additional development opportunities in some areas.

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8. Evaluation

Stage 1:

Listed below are a series of reflections derived from student feedback. They centre on broad concerns relating to accessibility and serve as the prompt for further evaluation below:

I. Students noted that clarity of intention for each of the sessions was a priority.

II. That taking time to recognise and accommodate the variation in level and prior experience, particularly when engaging with new and unfamiliar technology should be prioritised.

III. That connection to discipline and modes of practice ought to be transparent and 'built' through the learning process.

IV. Matters of health, safety and wellbeing related to use of the technology also need to be factored into initial discussions.

V. Greater emphasis might be placed on the ethical implication of work undertaken in these environments. Some further clarity/discussion regarding this point is required, however.

VI. That in some cases there were clear and substantial advantages to working in an environment where the visual feedback loop was immediate and immersive. This was regarded as revelatory/of great value although important to note that this was not the consensus.

VII. Accessibility to equipment and potential for inequality of provision was alluded to on several occasions in the feedback.

VIII. Developing fully inclusive modes of learning and teaching is challenging. While the cohort sizes were small some of the issues faced IRL are clearly echoed in the Virtual/Immersive space.

IX. Remote access was felt to be highly beneficial to some learners.

X. In relation to the previous point the ability to engage with immersive learning experiences from a physically private space was felt to be advantageous and supportive.

XI. Assumptions regarding access to (so called) basic levels of technical infrastructure need to be challenged and factored into the planning process.

XII. Some challenges are encountered when working in the fluid and sometimes unpredictable (in terms of social make-up) virtual spaces. Adapting quickly to new groupings and the tools to navigate those spaces effectively can be overwhelming particularly for neurodiverse students.

XIII. The use of technical language is a potential barrier.

Stage 2:

'Institutional' evaluation: each case study partner's ALSA cohort will be invited to review the digital work of the case-studies along with the Stage 1 reflections, and to provide their own commentary on what the case study achieved. This can be done again through a meeting with the case-study lead and the ALSAs at each of the two partner institutions, or via a shared document. The output would be a pair of commentaries from each ALSA cohort; this could also take the form of an annotated version of the Stage 1 reflections.

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9. Recommendations: What evaluations might lead to

- It is advisable that immersive environments should not be explored or designed in isolation, purpose and intentions need to be set out from the start.

- Further explorations will need to consider scaling up as all the activities were tested with a small cohort of 4-6 ALSAs. This will present significant problems such as space requirements, technical equipment provision and staffing. Experiences suggest optimum group sizes of 6-10 students are preferable and this presents problems when cohorts exceed 100+ students. Currently preference has been assigned to those students indicating an interest in these technologies.

- The production and dissemination of a staff and student guidance document specific to behaviour in online social spaces. This may also involve changes to existing student contracts or the acknowledgment that the same conditions also apply to these digital spaces.

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10. Next steps

- The Illustration Programme at CCW will continue building and testing digital learning spaces, the most important next step for us is the delivery of content in these spaces. To date activities have been preoccupied with onboarding, training, and initial interactions. While personal tutorials seem like the natural first step, and are closest

to the platform's intended usage, a wider range of teaching spaces/options will be needed to deliver the range of materials consistently delivered to students.

- Questions remain as to whether practice-based activities are feasible in these spaces and further investigations will be essential. Drawing Lab (Appendix 2.0) activities can continue to help provide guidance for practical delivery online.

- Initial planned Workshops to be delivered in Gravity Sketch and Frame VR using Quest Headsets might include Comic Club 3D panel capture in Gravity Sketch, Stepping into the work of Piero della Francesca in Blender > FrameVR.

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11. Appendix

1.0 Padlet developed during London training on the 7th of June 2022:
https://artslondon.padlet.org/kgardner50/5wghh43a61mt1wgx

2.0 Drawing Lab on Padlet
LINK

2.1 Padlet with initial proposed workflow
https://artslondon.padlet.org/mahawkins2/accelerateILL

2.2 Diagram of Illus specific technologies ecosystem on Padlet
https://artslondon.padlet.org/mahawkins2/VR_Research_Map

3.0 Accessible Student Learning Ambassador Induction Information

Accessible Student Learning Ambassador Induction Information for *Accelerate: Accessible Immersive Learning for Art and Design Project*

1. What is Accelerate?

Accelerate is an Erasmus+ funded research project. Starting in June 2021, this 2 year' Strategic Partnership' brings together art and design lecturers, educational researchers, and learning technologists from the UK, Ireland, Poland, and Ukraine to reflect on the impact of COVID-19 on higher education teaching and to explore new possibilities for pedagogy and digital innovation. This project is jointly delivered by Camberwell, Chelsea, and Wimbledon Colleges of Arts London (Arts, Design and Performance programmes) and the Creative Computing Institute. We aim to understand

what ‘immersive’ means for art and design education, and we want to investigate how to make immersive technologies accessible for art and design students and teachers. At the end of the project, our Immersive Ecosystem will include the following:

- Existing webXR tools that allow teachers and students to accelerate their curriculum
- New pedagogical tools – tutorials, videos, examples, discussions, materials for teaching, learning and exploring
- Including examples of how to deliver new forms of learning and teaching
- New, bespoke platform developed by UAL CCI in collaboration with the wider project team
- Provide the capability to customise how we might want to deliver learning and teaching
- Provide access to training across a wider range of levels – not simply consumer / designer, but also developer / coder

2. What is my role?

As an Accessible Student Learning Ambassador (ASLA), you will directly impact how CCW and CCI adopt accessible immersive learning and teaching practices following on from the project. Your contribution will inform our quantitative and qualitative findings. You will be brought in to test and evaluate the immersive ecosystem and participate in the production of case studies during the development, implementation, and evaluation stages.

Over the duration of the project, we will send out specific calls for responses via surveys, focus groups, and case study workshops. You do not need to accept every opportunity.

You will only be paid for the activities that you participate in. If you decline an opportunity, you will still be an Accessible Student Learning Ambassador.

You have been selected as an ASLA as you have self-declared with at least one of the following accessibility indicators:

- students with self-declared physical, sensory, and cognitive functional diversity
- students with self-declared different learning styles
- students who self-declare as being caught in the 'digital gap' (with low-quality devices, limited software, and poor or unreliable internet access
- students with health issues
- students with self-declared complex personal circumstances that affect their ability to participate fully in synchronous teaching (e.g. have caring responsibilities or who travel a long distance for class)

3. What types of activities will I be invited to participate in?

Throughout the project, you will be invited to participate in focus groups, surveys, workshops, training, conference events and project meetings. Each activity will differ from each other.

Some activities may only require a limited number of participants and will be allocated either on a first come, first serve basis, or, depending on testing requirements, based on specific accessibility indicators as identified in previous testing or workshop(s).

Each time that an opportunity is presented to you, you will be informed of the following:

- Duration of activity and how many hours you will be paid
- Any associated risks (*for example, disclaimers for Virtual Reality (VR) headsets)*
- How your data will be used and/or inform the project

- Anticipated date/time
- *If applicable,* request for support agreement (ISA)
- Contact details specific to the opportunity

If you are unsure if you want to participate in a specific activity, you can request further information or ask to have a virtual chat with the research team member conducting the activity and/or Chris Follows, CCW Emerging Technologies Manager, or Katie Gardner, CCW Digital Learning Producer.

4. Who do I contact if I have an issue before, during and/or after an activity?

If you have any questions or issues during the project regarding your participation or your payroll, please contact Chris Follows, CCW Emerging Technologies Manager, at c.follows@arts.ac.uk, and Katie Gardner, CCW Digital Learning Producer, at k.gardner@arts.ac.uk.

4.0 ALSA job description

https://docs.google.com/document/d/1__xQ3anFi1v75TKfiZruQRVinARPIm_t/edit?usp=sharing&ouid=111080300601997203915&rtpof=true&sd=true

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5.0 ALSA introductory Microsoft Teams meeting transcript

Hello ASLAs,
This is for a one-hour focus group meeting. All ASLAs are requested to attend, so we can discuss the key priorities for this cohort, and plan next steps for our activities and the project. Please accept this invitation if you would like to participate.

Tentative agenda for activity:
Introductions
Brief Q&A about the project and duties of the ASLA role
Drafting and agreement to terms of conduct/confidentiality of ASLAs
Focus Group activity *(see attached for the template of questions which will guide our conversation)*

Duration of the activity: 1 Hour
Any risks: No known risks
Data policy: The session will be recorded for the creation of an anonymised transcript. Once the transcript has been produced, all recordings and audio will be deleted. There will be an advisory notice before recording begins. Students will be able to turn on/off videos and microphones as they wish.
Date/time/location: 1 June 2022 from 10am-11am, Online via Teams
Contact: Katie Gardner, CCW Digital Learning Producer, k.gardner@arts.ac.uk

••

Key questions for today's focus group:

1. Course, course leader/tutor, and year of graduation.
2. If you have participated in workshop activities, can you indicate why you participated? Time, location, mode of delivery, content, other, etc.?
3. If you have not participated in workshop activities, can you indicate why you did not participate? Time, location, mode of delivery, content, accessibility issues personal to you, other, etc.?

4. Do any of your courses still engage with online or blended learning? If so, to what extent? How successful are these options?

We will engage in conversation, but feel free to respond to these questions in the chat, if you prefer.

[01/06 10:06] ALSA A
my tutor is David

[01/06 10:06] ALSA A
David Musgrave at Chelsea, and i am graduating this year in July

[01/06 10:07] ALSA B
Camberwell B.A. Hons Illustration, course leader Rachel Emily Taylor, current tutor Miriam Elgon, year of graduation 2023
[01/06 10:10] ALSA B
No problem, thank you!
[01/06 10:10] ALSA A
yes absolutely
(1 liked)

[01/06 10:10] ALSA A
sorry i'm having something to eat now and that's why i'm using the chat

[01/06 10:10] ALSA C
1. MA Curating and Collections, David Dibosa, 2022 Dec 2. It is in my interest in XR technology, and since we don't have opportunities to collaborate among colleges in my course, I do have to actively find opportunities to fill in that interest. It is a paid-opportunity, so that's great. Everything seems to be very well planned out, so it makes me feel our contributions won't go to waste. The Camberwell campus is also nicer than the Chelsea, so I do enjoy physically joining the workshops. It's also good to be in contact with teachers that are in related fields that I'm interested in

[01/06 10:12] Katie Gardner
Thanks! Great feedback. Are there any improvements that we can make that will maintain your interest?
[01/06 10:15] ALSA C
I think everything is great so far, but if we are able to continue to be a part of the project, maybe if the schedule was consistent for us, it would work well for us as alumnis (as it is likely for us to have part-time/full-time jobs along with this). For example now, we are having a workshop in one week then a feedback session the following week. The schedule is sent out very early so we are able to plan things, so that's great
(2 liked)

[01/06 10:16] ALSA A
At Chelsea, we have year meetings, artist talks online which has been great which makes them more accessible. we started to have some discussion sessions on campus which has been great as well

[01/06 10:17] ALSA A
i think when it comes to discussion focused meetings, students prefer on campus, offline platforms and for information or lecture based meetings, students prefer online

[01/06 10:21] ALSA A
At Chelsea we don't have courses on how to learn a specific programme or software, so I know some Chelsea students going to CSM or Camberwell to learn the softwares but because they are from Chelsea, not CSM or Camberwell, they have been experiencing difficulties in joining certain courses. expanding these courses that we did with you would be very helpful in the future

[01/06 10:24] Katie Gardner
Moving forward, would a set bi-weekly time be preferable?
(2 liked)

[01/06 10:27] Katie Gardner
I agree.
[01/06 10:27] ALSA C
If the longer workshops are bi-weekly (which I think they already are), that's a great plan. the feedback sessions are usually 1h or less, so I don't mind fitting them in the next week of the workshop or the same week of the workshop
(2 liked)

[01/06 10:29] Katie Gardner
Do people prefer the feedback and focus group sessions set apart from the activity sessions or would you like them to be run immediately following the workshop?
[01/06 10:30] ALSA A
i think it will depend on how long the workshops are

[01/06 10:32] ALSA C

Katie Gardner
Do people prefer the feedback and focus group sessions set apart from the activity sessions or would you like them to be run immediately following the workshop?
I agree with ALSA A, if the workshop is 3-4 hours the feedback session might be best scheduled apart from the workshop. I don't mind a feedback session right after the workshop if the workshop is around 2h
(2 liked)

[01/06 10:33] Katie Gardner
Exactly.
[01/06 10:34] ALSA B
I'd be happy to do some writing as a contribution
(1 liked)

[01/06 10:36] Katie Gardner
Would people be interested in a hack-a-thon style session that is only about collating feedback in various forms video, written, etc?
[01/06 10:36] ALSA C
I'm leaving London in July, and somewhat busy in August. But I'd be up for a few sessions in the summer if needed
(1 liked)

[01/06 10:37] ALSA A
congratulations Katie

[01/06 10:37] ALSA C
Congrats!
[01/06 10:37] ALSA B
Congratulations and good luck!
[01/06 10:38] Katie Gardner
Thanks everyone! I will definitely keep in touch as I plan to start immersive r&d groups up in Leeds and would love cross-institutional collaboration!
(2 liked)

[01/06 10:38] ALSA C
Katie Gardner
Would people be interested in a hack-a-thon style session that is only about collating feedback in various forms video, written, etc?
not sure what a hack-a-thon style is, but I probably won't mind
(1 liked)

[01/06 10:39] Katie Gardner
A sprint-style session devoted to creating an output during the session. Thanks for asking for an explanation. (smile)
(1 liked)

[01/06 10:40] ALSA A
Yes, that sounds great. in terms of time, i think it would be better for me to have in the mornings like today
(1 liked)

[01/06 10:41] ALSA C
For the monday workshop, do we have a confirmed room? and is it in Chelsea?
[01/06 10:41] ALSA A
oh and next Monday, how long will the training take? from 1.30 to

[01/06 10:42] Katie Gardner
Sounds great. I'll send that to Rosa following today's meeting.
(1 liked)

[01/06 10:44] ALSA A
and do we have the feedback session today?

[01/06 10:45] Katie Gardner
Today is the feedback session. Focus group was in place of it. So, we welcome your thoughts on the session on Friday as well.
[01/06 10:48] ALSA C
Thanks for the insight!
(1 liked)

[01/06 10:48] ALSA B
That's really useful to hear, thank you Chris and Katie
(1 liked)

[01/06 10:49] ALSA A
I don't have a laptop at the moment, just an ipad. would that be okay?

[01/06 10:50] Katie Gardner
I think so. If anything, it would add to our knowledge of the ecosystem
[01/06 10:50] ALSA C
great thanks!
(1 liked)

[01/06 10:51] ALSA A
that sounds great, thank you Katie

6.0 UAL ALSA Focus Group Meeting Notes 30th March 2022

https://docs.google.com/document/d/1rI6nqwyU0w44vOPeEek4df6XaFwd4Oo8/edit?usp=sharing&ouid=111080300601997203915&rtpof=true&sd=true

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7.0 Guidance for Immersive Technologies

last modified 25/03/2022

Pre-session preparation

1. **Install and update applications.** Ensure all applications are installed and updated prior to the session. If using shared VR headsets, ensure that the required applications are installed and updated/cleared of prior content before the session is set to begin.
2. **Creation of accounts and logging in.** If the applications require accounts and any special permissions, ensure that all participants have created an account and have successfully logged in prior to the session. It is recommended that there is a pre-sessional activity or training session to assist students in setting up accounts, logging in and familiarising themselves with the equipment.
3. **Select and register appropriate Wi-Fi network prior to the activity.** Institutional networks can interfere with optimum Wi-Fi connection to VR headsets. If possible, use a connected network. For headsets/ computer equipment not previously joined to the desired network, check to see if MAC addresses need to be forwarded to the institution's IT department prior to the session. If casting is required, all devices must be on the same network.
4. **Charge headsets and equipment.** Ensure all headsets, if applicable, are fully charged. Ensure all participants using a headset have access to a charging point if the session is more than 2-3 hours.
5. **Confirm the physical space** required for the number of participants and their equipment needs.
6. **Understand the technical and equipment requirements** for the desired workflow. Understanding the needs from the workflow of applications and equipment will ensure that you have all technical and equipment devices at hand for the session, for instance, computer to VR to computer.
7. **Communicate the required equipment** students need to bring, I.e., laptop, tablet, etc. for the anticipated computer to virtual workflow. Ensure students' equipment is set up with the desired networks prior to the session. See above recommendation #3.
8. **Communicate the safety requirements and protocols** for safeguarding students in their physical spaces prior to the session.
9. **Assign headsets and provide identification stickers** for the headsets. This aids in health and safety, ease of returning to headsets after any breaks, and provides tutors and others in the room the ability to recognise participants easily while in VR (Virtual Reality).
10. **Test Wi-Fi connection** in the room prior to the session. See above recommendation #3.
11. If using a web-based casting process for the VR experience, for example in Gravity Sketch via the Landing Pad, ensure your space has the appropriate projection equipment and test the VR to computer to projection casting in the room.
12. **Provide pre-sessional training.** Consider your students' access to equipment required for your anticipated workshop workflow. If participants have access to the headsets prior to the session, pre-load equipment introductory training segments on navigating the system and using controllers for added support for students with limited to no experience and/or access to VR equipment.

During session

1. **Have a clearly defined objective mapped to learning outcomes** for the session/series of workshops. A session delivered for technical acquisition of a particular application is different than a session delivered to foster online community and cross-collaboration.

2. **Develop scalable workshops and/or sessions** that consider a student's starting technical ability and familiarity with the equipment. It is recommended to divide a complex learning activity into several workshops, so students can reflect upon newly acquired skills and have ample time to achieve the intended learning outcome.
3. **Manage student expectations.** Clearly communicate the focus and outcomes of the session to students.
4. **Use screencasting** of one headset to support students that require a break from a headset and/or to show demonstrations, if applicable.
5. **Remember to pace your session.** It is recommended to take breaks from using the headset after 15-20 minutes to rest your eyes. Consider segmenting learning activities to enable breaks from the headset. Use non-VR applications of the intended interaction workflow to build in time between using VR. Also consider building reflective and discussion-based activities in between time in VR.
6. **Check in with your students** to review the pacing and scaffolding of the session. Adjust as required and always allow students to take a break from VR if they need it.
7. **Remember to charge headsets** during breaks.

After session

Following an individual session in a series of workshops:

1. Nominate a person responsible for the collection and management of all headsets back to the loan store and/or identified secure location for the equipment.

Following the conclusion of one-off session and/or series of workshops:

1. Nominate a person responsible for the collection and management of all headsets back to the identified secure location for the equipment.
2. Physically clean all headsets, controllers, and accessories, including removal of name identification.
3. Erase all personal and activity data from each headset and/or manually reset each headset. For Oculus Business headsets, this can be done via the Device Manager. For Oculus consumer headsets, this can be done via the App or manually on each headset.
    a. **To perform a factory reset using the headset:**
        i. Turn off your headset.
        ii. Hold the **power** and **volume (-)** button on your headset down simultaneously until the boot screen loads on your headset.
        iii. Use the **volume buttons** on your headset to highlight **Factory Reset** and press the **power button**.
        iv. **Use the volume buttons** on your headset to highlight **Yes** and press the **power button**.

Inclusion and Accessibility

1. **Offer optional pre-sessional** activities to increase familiarity with the equipment and with the concept of immersive technologies. This is especially important for students without previous access and/or experience with immersive technologies.
2. **Build in stimulus breaks** from the headset or WebXR environment into your session and/or workshop design.

3. **Acknowledge different accessibility requirements** for participants and how to customise their equipment.
4. **Communicate how and when a student or participant can be removed from the XR experience.** This helps participants manage anxiety and/or physical discomfort while in the experience by giving them control over their immersion into the experience. (e.g., how to remove the headset, is there a sequence to be removed from the screen, etc.)
5. It is recommended that sessions are screencast which enables students to remove headsets if they wish and still experience the activities.
6. **Identify the visual and verbal cues in your experience.** Identify the mobility access requirements to successfully navigate the experience to achieve the pedagogic aim. Can a user navigate without specific visual, verbal, or mobile signifiers? Are you using specific identifiers for controllers? I.e., in Gravity Sketch use the terminology of Drawing Hand Controller and Non-Drawing Hand Controller rather than Left Hand and Right Hand controllers as headsets enable users to customise their controllers based on their individual needs.
7. **Consider monetary barriers in the selection of digital applications.** Some digital applications have free, paid-for and/or in-app purchasing versions. Consider how these versions will impact a student's learning experience.
8. **Consider data protection and privacy policies of a digital application and/or immersive technology.** This is especially important if the application is scanning participants for biophysical data. Ensure that all students are aware of the data protection and privacy policies and can opt out. Ensure any required institutional data protection forms and/or processes are completed prior to the experience.
9. **VR experiences can trigger some participants.** Be sure to provide participants with a VR Disclaimer prior to introducing immersive technologies into your teaching. Consider using any and/or all the following information for drafting a workshop-specific disclaimer:
    a. Consult your doctor before using the VR Headset if you have pre-existing serious medical conditions (such as a heart ailment), conditions that affect your ability to safely perform physical activities, psychiatric conditions (such as anxiety disorders or post-traumatic stress disorder), or if you are pregnant or elderly. Do not use the product if you are sick, fatigued, under the influence of intoxicants/drugs, or are not feeling generally well, as it may exacerbate your condition.
    b. Like other products that produce visual effects (including light flashes), the product may trigger epileptic seizures, seizures, fainting, or severe dizziness even in people who have no history of these conditions. If you have a previous history of epilepsy or seizures, loss of awareness, or other symptoms linked to an epileptic condition, consult your doctor before using the product. To reduce the likelihood of a seizure do not use the product if you are tired or need sleep.
    c. Operate the product in a comfortable posture. Do not grip the product too tightly. Press the buttons lightly. If you have tingling, numbness, stiffness, throbbing, or other discomfort, immediately stop using the product and consult your doctor.
    d. Certain types of content (e.g. violent, scary, emotional, or adrenaline-based content) could trigger increased heart rate, spikes in blood pressure, panic attacks, anxiety, PTSD, fainting, and other adverse effects. If you have a history of negative physical or psychological reactions to certain real-life circumstances, avoid using the product to view similar content.
    e. If using tethered headsets, keep in mind the location of the cable and connections running from the headset so that you are not likely to trip over or pull on them while moving around or walking around the play area. Move your feet slowly and carefully to

avoid tripping, including on the cable. Make sure to maintain good footing. Tripping over the cable or contacting obstacles could cause injury or damage.

Application specific

Gravity Sketch: Collab Space Guidance

1. Scale use from one-on-one to multiple collaborators with a recommended maximum of 4 participants per room.
2. If joining with a synchronous or on-site session, ensure all users are muted within the collab space. Click on the mic below and set it to NONE default. It is important to disable the headset microphone to avoid deafening feedback from the headsets. If not physically in the same space or collaborating during a virtual meeting (I.e., Teams meeting at the same time), then users can use audio within the collaborative space in Gravity Sketch.
3. Rooms can be accessed before and after the sessions and identify how many people have access to the room and how many are currently using the room.
4. It is recommended to set the snap scaling to NON-SCALING and fix the axis to avoid disorientation.
5. It is recommended to name users correctly and differentiate different users through colours within the collab space. Users can access changing their name by navigating to the right of the rooms there is an avatar with a headset and controllers with a name tag. Click on the name tag to rename the avatar to be easily identifiable in the collab space. Click the blue tick once finished. To change the colour of your headset and controllers, click on the colour wheel and select a desired colour to be visible and distinguishable to the other participants.

This guidance has been developed through the Immersive Technologies R&D working group based at Camberwell College of the Arts, University of the Arts London:

Darryl Clifton, Illustration Programme Director
Chris Follows, Emerging Technologies Manager
Matthew Hawkins, Senior Lecturer & Integrated Practice Coordinator
Jayoon Choi, Lecturer
Kristina Thiele, Associate Lecturer
Marius Simpkus, Specialist Technician
Katie Gardner, CCW Digital Learning Producer

8.0 360° Extended Reality (XR) Drawing Brief

https://drive.google.com/file/d/1fv51Y2mVkCaZ7Gz_QkpAY8cdh5OfV5tl/view?usp=sharing

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9.0 'Volume Jockey' workshop proposal

Title: *Volume Jockey (working title)*

Rationale:

The rapid development and (affordable) accessibility of VR technology, through products such as Oculus Quest, suggests an imminent and sizable effect on the evolution of the practice of illustration. We aim to use this project to develop questions relating to the

visual/spatial conventions of illustrative practice as well as notions of authorship, image 'reading' or *visuality* and the potential that Illustration experienced through *time and space* might afford to practitioners and audiences.

What:
During the workshop phase of this project participants will be invited to explore a relatively simple workflow that uses pre-prepared templates and converts an original 2D drawn image into a virtual environment. Participants will then build objects that can be changed in scale and location inside of that virtual environment.
The symposium will develop some of the key themes and questions that emerge from the workshop through insight presentations, discussion, case studies, and

Phase 1:
1 day exploratory workshop with staff/students and industry professionals

The workshop would:

1. Introduce industry professionals to VR and Immersive technology.
2. Provide the expertise, kit and a structured programme of learning activity
3. Invite industry professionals to reflect on the experience and contribute to a discussion with staff and students.
4. Use the material generated during the day to contribute to the development of a learning platform that is fit for purpose for practising Illustrators as well as offer insight and perspective that helps students to frame their own approach to this technology in relation to practice via the EU accelerate project.
5. material generated to be captured and used as the basis for 1-2x day symposium

Phase 2:
1-2 day symposium introducing the potential of VR and immersive tech for Illustration practitioners and developing key discursive themes relating to these imminent changes.

Symposium would:

1. Introduce some of the capacities of the tech by showing examples of the work produced during the workshop.
2. Invite the participants in the workshop to discuss their experience of using the technology and considering the potential effects they may have. This talk will be themed/framed accordingly.
3. Introduce the EU accelerate project in this context.
4. Show the findings from the workshop as case studies alongside other visual examples and insights (external invited contributors?)
5. Invite speculative contributions from professionals, AOI, students and staff through a 'call-out' for contributions

'Volume Jockey' workshop planning document

Introduction:

This is the proposed workshop schedule/workflow including the preliminary session on the 16th November:

Title: *Volume Jockey part 1*

Preparatory Session (online via MS Teams)

Date: 16.11.21

Tutor: Matthew Hawkins (+)

Time:	**Activity:**	**Notes:**	**Kit:**
13:30	Introduction to Frame VR and Skybox artwork preparation	MH to develop worksheet/workflow to enable participants to prep for this	PC/Laptop
15:30	End		

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10 **Title:** *Volume Jockey part 2 Workshop* (onsite, PR Lecture Theatre)

Date: 23.11.21

Tutors: Chris Follows, Marius Simkus, Matthew Hawkins, Jayoon Choi, Kristina Thiele, Katie Gardner, Darryl Clifton

Time:	**Activity:**	**Notes:**	**Kit:**
09:30	Meet and greet Camberwell canteen		
09:45	Introduction to the project and the structure of the day	All to intro self and roles at CCW. AOI to intro their partnership role DC, CF to intro the project Matt, Kristina, Katie, Darryl, Chris, Marius, Include a visualisation of the workflow of the day MH	Standard LT projection kit and laptop
09:55	Examples of VR and Immersive tech work	MH, KT, CF to show e.g.s of work that relates to this project Matt to lead and others to add. Matt to prep in advance and circulate to group JC prerecord show examples	LT data projector and laptop
10:15	Participants to spend time in skybox with their preloaded a/work. Participants to spend time looking at others' skybox environments	**Start with this and then break:** **Need to consider whether we invite participants who are not familiar with Frame will need to go through the 10 minute tutorial** Marius to label to headsets and prep – need to collect from Chris	VR headsets, laptops, desktops (?) Ask CF to preload the 'first steps' tutorial on to the

		Will need to quarantine the headsets for 72 hours afterwards Need to check UAL guidelines on headset cleaning Note: we will establish one Frame VR and preload all participants skybox environments there – then spend time exploring the different drawn environments. We will cast the experience and tutors will act as 'camera-people' recording the experience.	Oc. for Bus. headsets
11:30	break		
11:45	Examples of gravity sketch and further explanation of the project	(all – please step up if you would like to talk about particular examples) to show examples of the Gravity Sketch work	Charge headsets
12:00	Working with Gravity Sketch	Need to consider what functions we want to introduce. Need to manage expectations re: this Need to have an understanding of what participants want to build What might the basics be? Consider 'scaling' Layers and grouping Duplicating Note: preload some assets? How to use the mannequin Should we ask participants what kind of 'things' they might want to put into their environment?	
12:30	Lunch		Charge the headsets
13:30	Working with Gravity Sketch short vox pop interviews with participants	Alexandra R C and team to undertake short interviews with participants – questions tbc	Film kit to be provided by Alexandra and her team
14:45	Exporting from Gravity Sketch – Importing to Frame VR	Need to outline clear workflow on this process	
15:00	break		Charge headsets
15:15	Continue to work with objects in VR space		
15:45	Conclude – general round up discussion about the experience and capture thoughts to be developed at symposium		
16:15	End	Consider the possibility of creating further opportunities for participants to come in and use the VR headsets between the workshop and symposium – to give chance to play with the tech	