Pandemic experimentalism: decentering studio art education in an ongoing global emergency

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The COVID-19 emergency pivot to online by art students and faculty of the first-year studio course Form and Time is a case study of educational experimentalism during global disruption, illustrated by examples of creative work by students.

As global emergency disruptions persist, strategies prioritizing experimentalism and creative encounter that combine blended, online and in-person platforms and networks such as WebXR can advance resiliency and accessibility, decentering ensconced barriers to studio art education

Abstract

After eighteen months of online art education during the COVID-19 pandemic, the authors consider *Form and Time*, a required first-year studio art course at OCAD University in Toronto, as a case study

within global practices of reconfiguration and experimentalism in art and design pedagogy during the crisis. *Form and Time* was scheduled to launch as a required first-year course on campus at OCADU in Fall 2020, but quarantine prompted the pivot to fully remote.

Critiques of the traditional art school's situated format were launched before COVID-19 by anti-ableist, Indigenous and feminist scholars, addressing access barriers and stressing resilience in the face of crisis and oppression. The pandemic disrupted the centrality of in-person studios and critique methods in post-secondary art education; this accelerated and took unexpected turns during the online pedagogical experiments of the early pandemic. In this context, *Form and Time* foreshadows new modes of art school studio delivery, decentering and critically intersecting with studio precedents suddenly disrupted by remote learning during COVID-19.

Form and Time's weekly asynchronous video lectures and online meetings probed themes of Space, Form and Time. Students posted weekly studio experiments on discussion boards, using materials close at hand. As with other art and design courses, everyday objects and materials provided a platform for discussing material conditions and encounters during the pandemic. Students depicted their unique surroundings using strategies of observation and walking. They accessed faculty-made online micro-workshops recorded by the various course instructors on home studio material techniques. These comprise a growing online archive shared by faculty teaching the multi-section course. Looking forward, we anticipate further crises. Greater interplay between online, blended and hands-on art studio education will prioritize flexibility that can better adapt to life pressures and emergencies, opening access for a diverse range of learners in decentered locations.

Keywords

course-based research; studio-based pedagogy; research-creations; art as research; WebXR

Experimentalismo pandémico: descentrando la educación de bellas artes en medio de una emergencia global

Resumen

Tras dieciocho meses de educación artística en línea durante la pandemia de la COVID-19, las autoras de este artículo tratan Form and Time*, un curso obligatorio en el primer año de Bellas Artes en la Universidad OCAD de Toronto, como un estudio de caso dentro de las prácticas globales de reconfiguración y experimentalismo en didáctica del arte y el diseño durante la crisis.* Form and Time *se lanzó como un curso obligatorio de primer año en el campus de OCADU en otoño de 2020, pero la cuarentena implicó un cambio a un entorno totalmente en línea.*

Las críticas al formato de aprendizaje situado de la escuela de arte tradicional se lanzaron antes de la COVID-19 por parte de autorías anticapacitistas, indígenas y feministas, que abordaron las barreras de acceso existentes y pusieron el foco en la resiliencia en épocas de crisis y opresión. La pandemia cuestionó la centralidad de los estudios presenciales y métodos críticos en la educación artística superior; un proceso que se aceleró e implicó giros inesperados durante los experimentos pedagógicos en línea de la primera fase de la pandemia. En este contexto, Form and Time *predice nuevas prácticas docentes en las escuelas de arte, que se deconstruyen y atraviesan críticamente los estudios precedentes, truncados por la aparición repentina del aprendizaje en línea durante la COVID-19.*

En las clases grabadas en vídeo y las reuniones en línea semanales de Form and Time*, se indagó sobre los temas del espacio, la forma y el tiempo. Los y las estudiantes publicaron experimentos artísticos semanalmente en foros de discusión, empleando materiales que tenían a mano. Al igual que otros docentes de arte y diseño, los objetos y materiales cotidianos constituyeron una vía para reflexionar sobre las condiciones materiales y los encuentros sociales durante la pandemia. El alumnado representó lo que le rodeaba usando estrategias consistentes en observar y caminar. Los y las estudiantes tuvieron acceso a microtalleres en línea creados y grabados en la facultad por distintos docentes del curso sobre técnicas de materiales de estudio en casa. Estos comprenden un archivo en línea cada vez mayor que se comparte por el equipo docente que imparte el curso.*

De cara al futuro, prevemos más crisis. Una mayor interacción entre la educación en línea, la híbrida y la práctica en bellas artes priorizará la flexibilidad ante las presiones y emergencias que se sufren en la vida, lo que permitirá el acceso de diversos alumnos y alumnas en posiciones en los márgenes.

Palabras clave

investigación basada en cursos; didáctica basada en el modelo de estudio; creaciones de investigación; arte como investigación; WebXR

1. Background

First-year university art courses are traditionally small, in-person classes preparing students for enrolment in disciplinary programs culminating in studio thesis work. These first-year courses emphasize in-person critiques and specialized hands-on studio and shop training. Consistent from the mid-twentieth century at OCAD University (OCADU) and many other Art and Design schools, this in-person, on-premises approach to studio education was disrupted by the 2020 pandemic pivot to remote delivery. In a parallel development, some courses that were formerly offered entirely online have shifted to include blended options where new modes of optional in-person and virtual synchronous encounters are emerging. *Form and Time*, a required first-year course launched online in 2020 at OCADU, is a case study in an emerging studio pedagogy that emphasizes flexibility and multi-modal options for online and blended studios.

First-year art studio courses typically introduce disciplinary program areas in the Faculty of Art to students whose secondary art education experience is often primarily in observational drawing (Owen 2019). At OCADU, *Time-Based Media* (gateway to the Integrated Media program) and Form and Structure (gateway to the Sculpture/Installation program) were required first-year studios prior to Fall 2020. In these courses, class sections of around twenty-five students met weekly for three hours in the first-year fabrication studios or computer labs and studio-seminar rooms. Techniques for specialized tool use, fabrication and safety, mandatory for upper-year access to specialized fabrication studios and higher-end equipment, were taught alongside critiques with instructor-led, in-person, face-to-face discussion of works in the room as the preferred pedagogy for generating meaning through making.

Fault lines in this model emerged before the disruption of COVID-19. The decentring of the art school's studio-based format was initiated in critiques from anti-ableist, decolonizing, Indigenous and feminist scholars, addressing accessibility and resilience in crisis and oppression (Dolmage 2017; Simpson 2014; FemTechNet 2020). Inequities of access are disproportionately experienced by international students, learners from northern communities and First Nations, the financially precarious, and those who cannot or choose not to relocate to downtown (Simpson 2014; Philips and Colton, 2021). This includes students facing accessibility challenges due to physical and mental health and those encountering systemic discrimination within the art school (Kaspar 2020; Simpson 2014; Sins Invalid 2020). OCADU's 2017-2022 Academic Plan[1] frames accessibility alongside decolonization. Renewal of pedagogy and cluster hires of Black and Indigenous tenure-track candidates are amongst initiatives implemented by OCADU to support accessibility, sustainability, representation, interdisciplinarity, relational and place-based knowledge and practices, and decolonization including training in anti-racism. The curriculum is also being reconfigured to implement the Truth and Reconciliation Commission (TRC) of Canada's Calls to Action, including educating teachers in how to integrate Indigenous knowledge and teaching methods in post-secondary classrooms (TRC 2015, 331).

Upper-year advanced studios are expensive to run, with specialized facilities and class sizes governed by the limits of space and durations of individual critiques. The cost of small, resource-intensive studios is offset at general universities by required large-format lectures. OCADU has implemented an institution-wide process requiring students to take courses in larger formats (sixty-plus students); still small compared to general university lecture-hall courses. Cross-disciplinary courses, including Form and Time, were developed from 2018 onwards at OCADU as a mechanism for offsetting the costs of small studios. Rather than writing papers to be marked by teaching assistants, student assignments for *Form and Time* were designed to include online documentation of creative experiments in a diverse range of media. The development of these

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1. OCADU's Academic Plan 2017-2022 devotes priorities 6 and 7 to interdisciplinarity and changes in studio delivery and the teaching and learning environment, in the context of an institutional call to decolonization.

courses and assignments rapidly accelerated and took unexpected turns as a result of the pivot to remote delivery in response to COVID-19 in 2020, including the proliferation of student projects in online frameworks including artworks and creative experiments in virtual environments such as WebXR, Miro boards, and other collaborative interfaces.

2. Remote delivery during the pandemic

Form and Time was launched online within an international context of reconfiguration and experimentalism in art and design pedagogy during the crisis (Glissmann and Kimbal 2021; Kasper 2020; Martins 2021). Before the pandemic, authors Simone Jones and Judith Doyle worked with a team of faculty members from the Sculpture/Installation and Integrated Media programs to design the new course called *Form and Time*, with a faculty working group including instructors from *Time-Based Media* and *Form and Structure*, supported by the Faculty Curriculum and Development Centre (FCDC). The idea was to position studios in connection with large-format lecture/presentations, from the perspective of contemporary practising artists and including panels, interviews, video documentation, artist writings and records, focusing on the artist's viewpoint and experience within their studio practices. Cross-disciplinary and thematic, the large-scale auditorium screenings and presentations would be unpacked in smaller faculty-led studio-seminars and micro-workshop makerspaces led by technicians and teaching assistants. The course was divided into thematic units of Space, Form and Time, to run for a month each over the 12-week semester. Each thematic unit had weekly sub-themes. The plan was for students to conduct weekly creative experiments responding to the themes, culminating in a synthesis artwork for each unit. Within their submissions, students would trace or summarize the ideas and studio practices of the artists whose works were presented each week, building contextual bridges between artist presentations and individual studio experiments.

In Fall 2020, the new course pivoted to launch in fully remote delivery for three consecutive semesters with enrolments of between 150 and 240 students each semester. The COVID-19 response called for quick improvisation, including the creation of a suite of instructional videos for weekly release and a reworking of prompts for creative experiments that could be undertaken without access to campus. The entangled global emergency conditions included physical distancing, lockdown, border closures, police brutality, worldwide anti-racism protests, and climate crisis.

Form and Time launched online with the Space thematic, with subthemes of site and intervention, decolonizing site, and site installations – site fictions. Studio activities included walking, observation, documentation and experimentation including memory, positionality and land. Weekly discussion posts and comments came from local, regional and international art students, whose creative experiments referenced site-specific and personal aspects of place.

"Decolonizing Site" (week 2 of the Space unit) included the option of making a Land Acknowledgement. Emilia Nahdee experimented with photography. The image below superimposes three self-photos: two taken in the town of Oakville in the Greater Toronto Area and one from Walpole Island Unceded Territory (Figure 1). Nahdee writes, "Indigenous culture, land and history is still alive, vibrant and dynamic. Those who choose to look closer will find details in the layers, but the constant in the image (and this land as well) is the experiences of the Anishnaabe Indigenous person. I intend through the blurred appearance and saturated layering of images for my audience to reflect, looking closer at their own communities and actively acknowledging the land and its first peoples" (Nahdee 2020).

Figure 1. Emilia Nahdee, *Land Acknowledgement*, digital compilation photograph, 2020
Source: Emilia Nahdee

Weekly asynchronous video lectures were released for each current theme and subtheme. Students were offered two synchronous meetings (two hours each) per week (one with the large-format lecturer, one with the section instructor). Along with comments posted in online discussions (arranged into smaller student groups), peer feedback included weekly online synchronous meetups and "Crit Clubs". These synchronous and asynchronous opportunities emerged as important pilots for new distributed forms of feedback and critique.

Fabrication techniques normally taught in the first-year wood shop translated to experiments with non-traditional materials that were available to students in situ. As a multi-section course, course faculty and teaching assistants bring a diverse range of skills and practices to the curriculum and contribute to a growing library of instructional assets called video micro-workshops. These micro-workshops correspond to the weekly sub-themes and provide faculty with the opportunity to teach techniques that highlight their areas of expertise. Examples of these micro-workshops include *Performance* by Derek Liddington, *Scaling-Up* by Stan Krzyzanowski, *Working with Audio* by Bentley Jarvis, *Chroma-Key* by Michael Page, and *Mould-making* by Catherine Telford-Keogh (Figure 2). Available as asynchronous content, students could opt to experiment with the micro-workshops based on their individual interests and curiosity. As an example, *Form and Time* student Gabriel George created the *Candy Comb* (Figure 3) using techniques from the mould-making micro-workshop released during the *Form: Multiples and Repetition* unit.

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Figure 2. Catherine Telford-Keogh, *Mould-making* micro-workshop, still from an asynchronous instructional video, 2020. Source: own creation
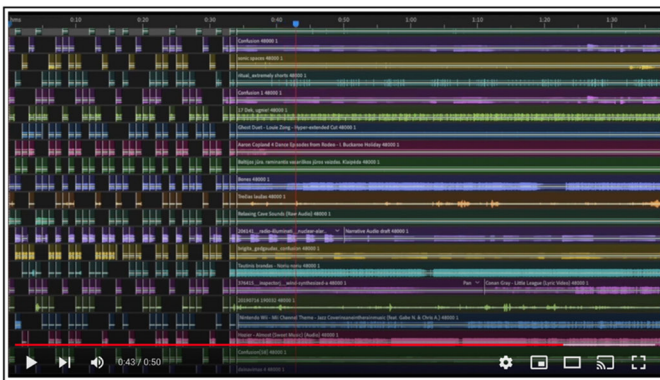

Figure 3. Gabriel George, *Candy Comb*, mixed media, 2020. Source: Gabriel George

The practice of working with materials close at hand and unpacking their material affects during the pandemic emergency was a widely adopted strategy in art and design remote teaching (Loveless 2019; Martins 2021; Glissmann and Kimbal). Assignments for each unit of *Form and Time* emphasized documentation, experimentation, process, DIY techniques, and fabrication using everyday materials that are accessible and "close to hand". Students were assessed on a rubric of criticality, ideation/experimentation/observation and thoroughness of documentation. We were informed by pedagogical approaches centered on creating communities of care, emphasizing accessibility and accommodation, and letting go of enforced standards of homogeneous engagement (Martins 2021; FemTechNet 2020; OCADU FCDC 2020). The team worked intentionally toward an atmosphere of collegiality, community and peer-to-peer learning and exchange of ideas, believing this to be critical to the success of the remote studio learning environment.

To share a diversity of responses to the course themes, students' works were highlighted in "Artist Spotlights" that resembled blogs with four or more student projects featured on the course home pages each week. During the Time unit, the sub-theme "Flux, Flow and Change" introduced Eisenstein's cinematic montage theory including rhythmic montage, where seemingly disconnected shots of the same length are cut together into percussive, intense sequences. Brigita Gedgaudas featured in the *Time: Flux, Flow, Change Artist Spotlight* (Figure 4), writes, "Thinking about montage and specifically rhythmic montage, I decided to cut together most of the audio files on my computer... (the diagram below) is of a pattern for a Lithuanian sash, which was my guide for the (audio editing). In pulling from the collection of audio files on my computer and Lithuanian culture, making this felt like the answer to the question 'Who is Brigita?': that question is always bigger than what you can express directly..." (Gedgaudas 2021).

Figure 4. Brigita Gedgaudas, *Rhythmic Montage*, still from sound editing project and accompanying artist statement, 2021. Source: own creation

"Artist Spotlights" revealed a range of responses to the weekly themes and celebrated individual students' work. There were also opportunities to share work during weekly synchronous meetups that included "Crit Clubs" – long-format critiques – for which students had an option to sign up for. Faculty observed that these synchronous critique sessions were popular among students. Although not all students chose to share their work, many participated as observers, providing feedback, engaging with the ideas presented and sharing their individual responses to the weekly themes. These discussions were intensely interdisciplinary. Students executed their ideas using a variety of media and approaches

and were open to discussing their areas of interest; for example, students shared that they came from a traditional drawing background but were now interested in 3D explorations in relation to their 2D practice.

3. WebXR Exhibition and Critique Studio

WebXR provided a platform for first-year students to share volumetric models, installations and soundscapes. At OCADU, WebXR experimentation began in the Unreal Club based in the Social Media and Collaboration Lab (SMACLab) led by Judith Doyle. Doyle used volumetric capture in workshops conducted at the Athens School of Fine Arts in 2019 and at ISEA 2019 Gwangju: *Tangible, Embedded, and Embodied Interaction*. Photogrammetry and volumetric capture were techniques shared by student and faculty members of the Unreal Club. Dr. Haru Ji worked with students to build generative and procedural conceptual artworks. Dr. Graham Wakefield, at the Alice Lab at Toronto's York University (York U), explored WebXR platform development with his advanced students. Together, researchers at OCADU and York U secured funding to develop an open source, open access *WebXR Exhibition and Critique Studio* for undergraduate and graduate students, focusing on project creation, curation and critique and supported by the Government of Ontario's eCampus program.[2] The project aimed to develop WebXR to support local and community-based pedagogy by developing accessible technology, using research-creation and course-based research methods.

Led by Judith Doyle, collaborators included Dr. Wakefield and his researchers including Nick Fox-Gieg at York U, and Simone Jones, Elizabeth Lopez and Dr. Ji at OCADU. During Summer 2021, the researchers designed, prototyped and tested WebXR approaches.

In preparation for the course-based testing, researchers at OCADU developed an A-Frame WebXR interface, supported by video tutorials and a user manual on Git Hub including programming templates, with programming and design by Nick Alexander and Tyson Moll. The team designated a Project Manager (Lopez), who created video and synchronous online tutorials, and a Virtual Studio Manager (Ernesto Rodriguez), who were available to assist students with photogrammetry and WebXR, in class and by appointment.

Prototype artworks by Joaquim (Juka) Almeida and Paulina Aviles were piloted in the summer of 2021 to identify and stress test WebXR features. Aviles's work in photogrammetry engaged with museum practices of collection from her position as an OCADU undergraduate intern working remotely in Mexico, creating a volumetric collage from collections in a local cultural archive.

Almeida, at the time a candidate in OCADU's Interdisciplinary Art, Media and Design MFA program, created an experimental installation in WebXR including archival Brazilian film, performance, sound and mask. Almeida writes: "This mask represents a *Cangaceiro*, a folkloric Brazilian entity... It has a moveable jaw structure and was created with cardboard strips and hot glue; painted with gouaches and coloured pencils. The image displayed was captured through photogrammetry stored as a point cloud." (Figure 5.) There is a speculative dimension to the experimentalism of Almeida's WebXR project; archival and folkloric elements are remixed to "defamiliarize and reorganize the local" (Loveless 2019, 301).
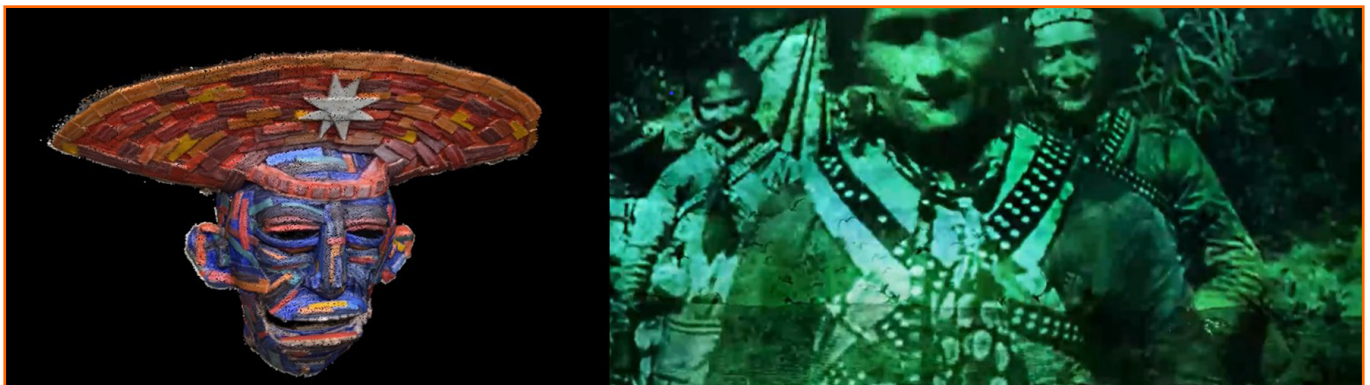

Figure 5. Joaquim Almeida, (left) *Cangaceiro mask*, a point cloud for installation, and (right) *the sea will become the sertao*, a still from a digital video scrim installed in WebXR, 2021. Source: own creation

In Fall 2021, *Form and Time* piloted the open source, open access WebXR Exhibition and Critique Studio, staging student virtual installations of photogrammetry. WebXR was an optional creative approach, presented in the Form unit's "What is Form?" section. Students could create photograms: 3D models compiled from digital photographs taken from multiple positions, following simple guidelines, using their mobile phone cameras. The photographs were compiled using free or low-cost software. The photogrammetry was installed in WebXR in a string of networked "gallery" spaces, accessible through a web page interface resembling orbitals (Figure 6). The WebXR exhibition can be viewed using an ordinary web browser without special software, goggles or computing powers at https://ocadu-web-xr.glitch.me/. It can also be viewed with a head-mounted display and was screen captured for media installation.
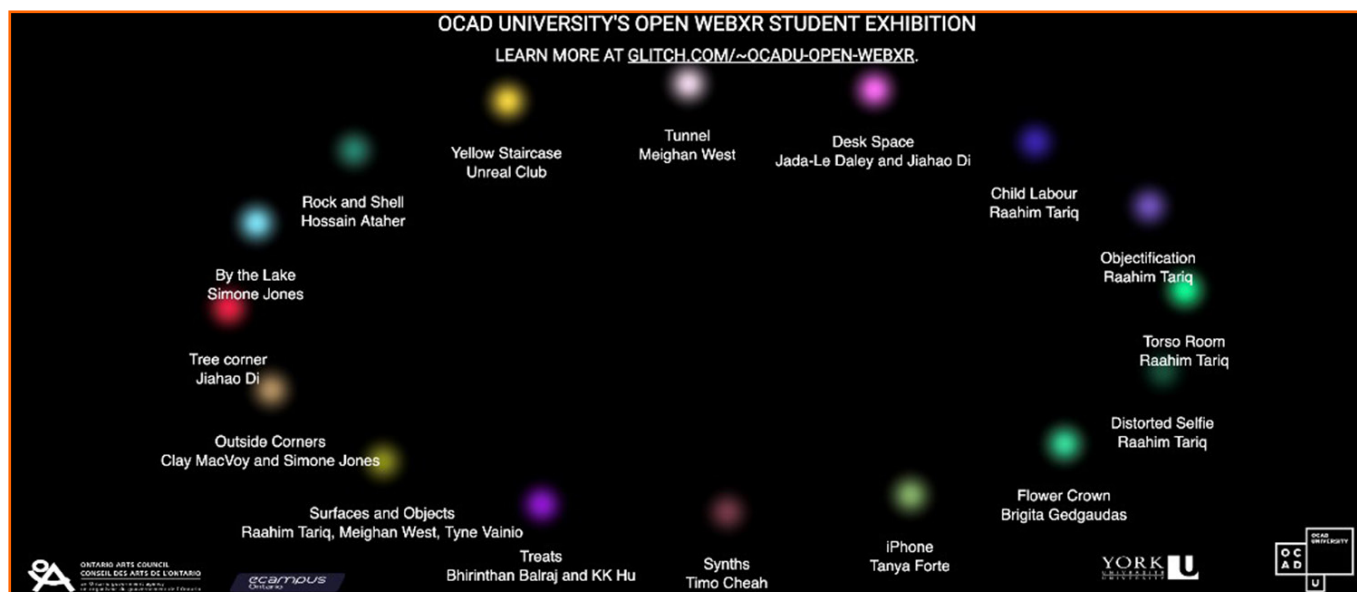
Figure 6, OCADU's WebXR home page. https://ocadu-web-xr.glitch.me/. Screen capture August 7, 2022. Source: own creation

The point clouds are staged in black zones without floors or walls, eschewing the "white box" skeuomorphic realism of Kunstmatrix or SecondLife, that aspire to represent the outward appearance of real-world galleries. On the contrary, OCADU's WebXR embraces an aesthetic of glitch experimentalism and signal-noise fragmentation. The glitch approach is clear in a self-portrait series of photograms created by first-year *Form and Time* student Raahim Tariq and installed in WebXR (one shown in Figure 7). This series depicts Tariq's head, torso and a small sculpture, exploring and distorting Tariq's experiences of embodiment.

Arranged together in not so much an online exhibition as a collaborative work of place-making, fragments of photogrammetry, sound and supporting documentation were assembled in the adjoining spaces in WebXR. Consistent with experimental film and performance, the WebXR space is a rhizomatic zone of experimental encounters and topography. The language of pandemic experimentalism includes self-made media productions, DIY and emergency worldbuilding, challenging the status quo and what Sean Redmond calls "normative understandings of how things must be" (Redmond 2022).

4. Collaborative sites

For the research project, each course-based team created templates, resulting in three open access toolkits for exhibition and creation in WebXR. Aligned with the vision of the eCampus Ontario Virtual Learning Strategy, the research aimed to strengthen access to post-secondary online learning. The kits produced are now published in the VLS catalogue and are available as free resources to province-wide educational institutions (Ji 2022; Moll *et al.* 2022; Wakefield 2022).

Design and prototyping by undergraduate and graduate students in the Creative Computation class based at the Alice Lab at York U led by Dr. Wakefield included course work on WebXR that featured real-time collaboration and generative art, including design to best support distributed creative experimentation.

Dr. Ji piloted WebXR as part of OCADU's *Digital Futures Atelier 1* seminar course, in the "Endless Forms Most Beautiful" unit. For this

Figure 7: Raahim Tariq, *Distorted Selfie*, 2021. Screen capture of point cloud from WebXR
Source: own creation

project, Ji and her researchers developed a prototype framework for generative art. Students copied the code template and then modified it to add their own generative artworks.

The *Form and Time* team at OCADU developed the A-Frame WebXR interface using Glitch, an open source, open access project manager, with a user manual with quick use entry-level programming templates, compression tools and video tutorials. By making a copy of the template project and then swapping out elements with their own work, deleting others, and changing attributes such as scale, position, rotational and positional animations and audio tracks, the space can be customized for individual student projects. Point clouds, meshes and video scrims are supported.

5. Student evaluation of group interaction online

Student course evaluations are conducted at the end of each semester at OCADU, an anonymized process conducted by the FCDC at arm's length from the teaching faculty. As shown in Figure 8, evaluations from three of the large-format online sections in Fall 2021 identify areas of strength to include "Group Interactions" and "Individual Rapport", results that would typically apply to in-person experiences. The authors are encouraged that the fully online sections exceeded student expectations in these areas.
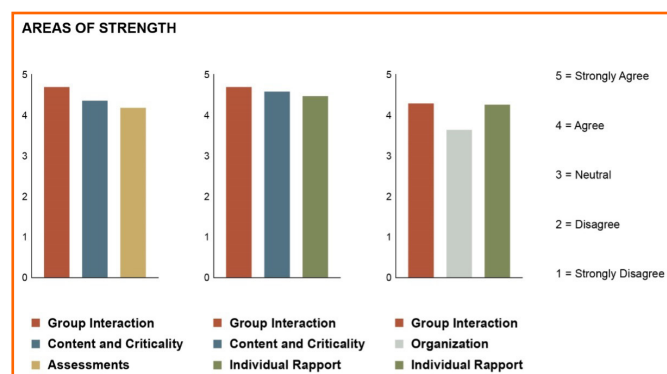

Figure 8. Tabulated responses from student course evaluations of three large-format sections (60+ students each) of the Fall 2021 semester of the required First-Year course *Form and Time*. In these fully-online sections, Group Interaction ranked as an Area of Strength

Source: own creation

6. Course-based research on WebXR: student focus group observations

Course-based research conducted at OCADU adheres to and endorses the research ethics guidelines of Canada's Tri-Council, a joint policy developed by three federal research agencies: the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council of Canada, and the Social Sciences and Humanities Research Council of Canada (Government of Canada 2018).

The course-based research conducted with students in *Form and Time* focused on the use of WebXR studios for online exhibition and critique, undertaken with prior approval from OCADU's Research Ethics Board. Two focus groups took place on February 3, 2022, including student volunteers who shared their experiences. Supported by an online survey tool, the focus groups were led by research assistant OCADU Masters candidate Paige Labar, who compiled the results.

The creation of digital point clouds from photogrammetric capture was a new medium for all the students in the focus group. Peer-to-peer feedback, sharing of process documentation and encouragement from faculty and staff in discussion threads and class presentations were the most significant contributors to their learning explorations. Viewing experiments by other students in discussion posts, "Artist Spotlights" and synchronous and recorded classes were also cited as motivation to create their own works. Video tutorials in the form of micro-workshops were identified as very useful, alongside one-on-one support by email and in online meetings with researchers. Half of the students supplemented these course resources with their own online research.

Freedom of movement and perspective, immersive and surprising visuals, and spatialized sound design were noted as strengths of the WebXR exhibition and critique studios. Artist statements included as sidebars were appreciated for providing context and connection with remote peers. In contrast with physical galleries, students noted that they could look at an artwork at their leisure from different angles and from the inside out, without the constraints of a floor, gravity, other people or solid objects. Students commented that WebXR, being browser-based, does not require specialized VR equipment, which allows them to share their work not only with fellow students, but with friends and family.

Areas for improving experiences were also identified. When online sessions ran longer (approaching two hours), dry and tired eyes were reported, which should prompt consideration of breaks inserted into lengthy class times. Students identified some technical issues with VR space navigation, especially when done concurrently with online presentations. They were optimistic that these issues could be resolved going forward. (All technical issues were forwarded to the programming lead, with several addressed prior to the publication of this paper).

Going forward, suggestions for increased functionality included adding a chat feature or even a video meeting capability within the VR space, so that the artists could receive direct feedback and have encounters with visitors.

7. *Interplace*: video installation including screen capture from WebXR

As an emerging medium, there is a dearth of research on the educational affordances of virtual environments (Dede & Richards 2017), but several of the student focus group observations noted above are supported by other studies. Virtual and physical worlds are not mutually exclusive. The browser-based display of WebXR can lower the barrier to access posed by specialized headsets and powerful computing. This

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supports the adoption of the use of VR and AR in social learning spaces. (Scarvelli *et al*. 2020)

When the university campus reopened in early 2022, opportunities emerged for limited physical encounters. As students re-entered the building, additional course supports were made available. A photogrammetry makerspace was scheduled in the Integrated Media Post-Production studio with in-person support from Lopez, Doyle and technical manager Gerald Grison. Students dropped in for one-on-one instruction and hands-on assistance.

Figure 9: *Yellow Staircase, OCADU*. Unreal Club (Judith Doyle, Nick Alexander, Lillian Leung), 2020. Screen capture of point cloud from WebXR
Source: own creation

Interplace, a video installation featuring screen-captured moving images from the WebXR galleries of *Form and Time* in Fall 2021, was exhibited at the Ada Slaight Student Gallery and the Great Hall at OCADU in March and April 2022. The exhibition included five large monitors and two video projectors displaying screen-captured footage of photogrammetry produced in students' home studios, dispersed across localities during COVID-19. The screenshot below (Figure 9) of a collaborative capture by the Unreal Club shows a photogram of six floors of the central yellow staircase in OCADU's main building: graffiti frozen in place during the pandemic facility closure.

Techniques for capturing moving images in the WebXR galleries were introduced in the "Time" unit of *Form and Time*, in the context of cinematic point of view, observation, gesture and montage. Camera movement and tracking shots, shifts of scale (close-up, establishing shot) and virtual specifics including object rotation were explored. Aligning the physical and virtual filmmaking techniques pedagogically

revealed similarities and differences between virtual and physical installation, documentation and exhibition.

Sound creation for the WebXR exhibition spaces was led by musician, composer and sonic artist Paul Geldart, who introduced spatial, immersive and interactive approaches to sound design in virtual environments, alongside live performance. Affordances of audio spatially placed throughout virtual exhibition spaces and influenced by algorithmic "wind" and generative forces were explored. Geldart performed live at both *Interplace* exhibition events, contributing to student and community engagement (Figure 10).
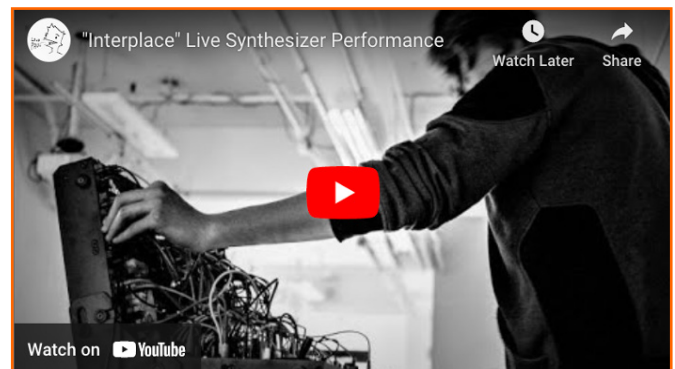

Figure 10: Paul Geldart, "Interplace" Live Synthesizer Performance, Loud Paul's YouTube channel
Source: YouTube

Interplace marked the return to in-person exhibition on campus following the easing of pandemic restrictions. It provided a long-awaited occasion for students acquainted online to meet in person and to enter campus together for a shared event. The culminating exhibition is an option for hybrid, online and blended teaching pedagogy. Expanded and mixed reality exhibitions, collaborations and events have the potential to foster community-based engagement decentering studio art pedagogy by supporting community-based networks in a live public event, drawing from the experience and resources of sustained online interaction and collaboration. This different form of in-person option increases the possibilities for connection and engagement for those without the accessibility conditions or the desire to participate in the traditional weekly face-to-face in-person studio learning format.

8. Reflections and Observations

Launched during an emergency, *Form and Time* de-familiarizes and troubles dichotomies between studio delivery modes – online or in-person, synchronous versus asynchronous. Employing a multi-modal, blended format, the course engages different modes of delivery and group sizes, fostering experimentation and interdisciplinary approaches to artmaking and research-creation. Building community for students in their first year of university is an impor-

tant component of the course. Student participation in synchronous and asynchronous contexts for information sharing and exchange of ideas fostered an inclusive environment that was dynamic, respectful and highly rewarding.

The authors observe that direct teacher-to-student, one-on-one feedback, including marking, poses challenges in large format studios. It is time-consuming and not scalable. Student peer-feedback, including group work, contributes to managing class size and motivating students.

A blended mode can combine online and in-person options with differently scaled encounters. Optional sign-up activities – field trips, gallery visits and makerspaces – introduce first-year students to their peers, the campus and local art communities. Differing faculty expertise and preferences for teaching modes (online, partially remote) complement each other through shared online resources and scheduling innovations. Online studios, including WebXR, are leveraged to facilitate collaboration amongst students, courses, faculties, universities and community-based networks, accruing an archive of open source, open access assets, including the studio WebXR platform and supporting video micro-workshops and tutorials, student examples and creative computation toolkits.

Different scales of hands-on and in-person group interaction provide students with greater agency over their educational options. Sites of encounters can include virtual environments, including WebXR (Doyle & Fei Jun 2013; Scarvelli *et al.* 2020).

The adaptations and decentring methods imposed on students and educators during the pandemic should not be ignored. As Marcos Martins writes in Brazil, "Having been forced to make adaptations and improvisations to face this pandemic, we can choose not to discard them as necessary interventions in a 'different phase that will pass'" (Martins 2021, 111). A pandemic emergency informed approach will engage students in dispersed, interdisciplinary research-creation networks, through strategies that include a diversity of fabrication options, DIY and place-based knowledge and accessibility as approaches to meaning through making (Redmond 2022; Martins 2021; FemTechNet 2020)

Shaped by the enforced distances of the COVID-19 pandemic lockdown, *Form and Time* now offers online, in-person and blended studio options and modalities. Accessibility is enhanced when educators use:

1) multiple means of representation,
2) multiple means of expression, and
3) multiple means of engagement (Rose *et al.* 2006).

Accessibility can be supported by a blended approach, where physical and virtual studios are options and exchange between them is encouraged. Immersive engagement using a head-mounted display is just one way of activating WebXR for creators and audiences, alongside browser-based interaction, generative media, screen capture, exhibition, critique and live performance.

Conclusion

The centrality of physical on-premises studios in first-year art education, framed in fixed time slots, has been disrupted and decentered. This disruption of traditional art studio education was triggered by decolonization initiatives and financial imperatives, and the process accelerated and took unexpected turns during the pivot to remote learning in 2020, necessitating experimentation with modes of online creative activity and encounter. As access to campus and studio fabrication studios reopen, rather than returning to business as normal, opportunities exist to reconfigure studio art pathways for the ongoing global emergency. This requires further decentering practices of creative experimentation, materials-handling and technical instruction. Students and faculty now expect more engagement between online, blended and in-person approaches, with flexibility that integrates better with everyday life pressures and accessibility for learners in eccentric locations. Usability studies demonstrate that when we include the margins in this reconfiguration process, at least two by-products emerge: resilience in emergencies such as COVID-19, and support for the diverse backgrounds and situations of students (Philips & Colton 2021). As Sean Redmond observes, during the pandemic lockdown, "everyday creativity brought people together to share their experiences of loneliness and through these gatherings, to keep it at bay" (Redmond 2022, 12). A pedagogy of pandemic experimentalism expands beyond the confines of the institution and its events, fostering entangled relationships between students, communities (physical and virtual), localities and networks of care and resistance.

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