

Sensory Storytellers: Virtual Production, World Building, and Collaborative Authorship in Screen Education

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Abstract

This practice discovery examines how virtual production technologies can reshape screen production pedagogy through the lens of *sensory storytelling*: a mode of narrative emergence in which meaning arises through embodied engagement with space, light, material, and atmosphere. Drawing on three iterations of the Unreal Design workshop series at the Australian Film, Television and Radio School (AFTRS), with analysis centred on the 2025 iteration *Fire & Ice*, the study investigates how real-time virtual environments function as pedagogical scaffolding for collaborative authorship. Grounded in World Building methodology, embodied cognition, and distributed creativity, the workshop invited production design, cinematography, and directing students to develop immersive environments in Unreal Engine before any narrative was determined, culminating in a one-day ICVFX shoot on the AFTRS LED volume. The study draws on student screenwork and reflective responses to identify three interrelated pedagogical conditions: embodied interaction as a mode of learning, authorship as negotiated practice, and sensory storytelling as a *proto-narrative* condition. The findings demonstrate that world-first virtual production pedagogy cultivates spatial literacy and collaborative capacity, offering a framework for rethinking how screen stories emerge and who gets to shape them.

Keywords: Virtual Production, World Building, Distributed Creativity, Embodied Cognition, Sensory Storytelling, Screen Pedagogy

Introduction

Much of what shapes screen storytelling is difficult to see. While narrative structure and performance are readily discussed and analysed, the sensory conditions through which stories are felt—light, space, movement, and sound—emerge through collaborative processes that are often treated as ineffable and remain difficult to acknowledge within screen production scholarship. Authorship in these moments is distributed across bodies, technologies, and sensory conditions, yet conventional workflows and critical frameworks render these contributions largely invisible. Virtual production, here referring specifically to LED volume technology, in which real-time game engine environments are displayed on large-scale LED walls to create in-camera visual effects (ICVFX), offers a pedagogical opportunity to interrupt this condition. By enabling real-time interaction between physical and virtual elements through a circular, non-linear production model in which pre-production, production, and post-production phases become simultaneous and iterative (Figure 1), collaborative teams encounter narrative as a sensory environment. Production designer Todd Cherniawsky (2023) terms this collapse of sequential phases *pre-pro-post*.

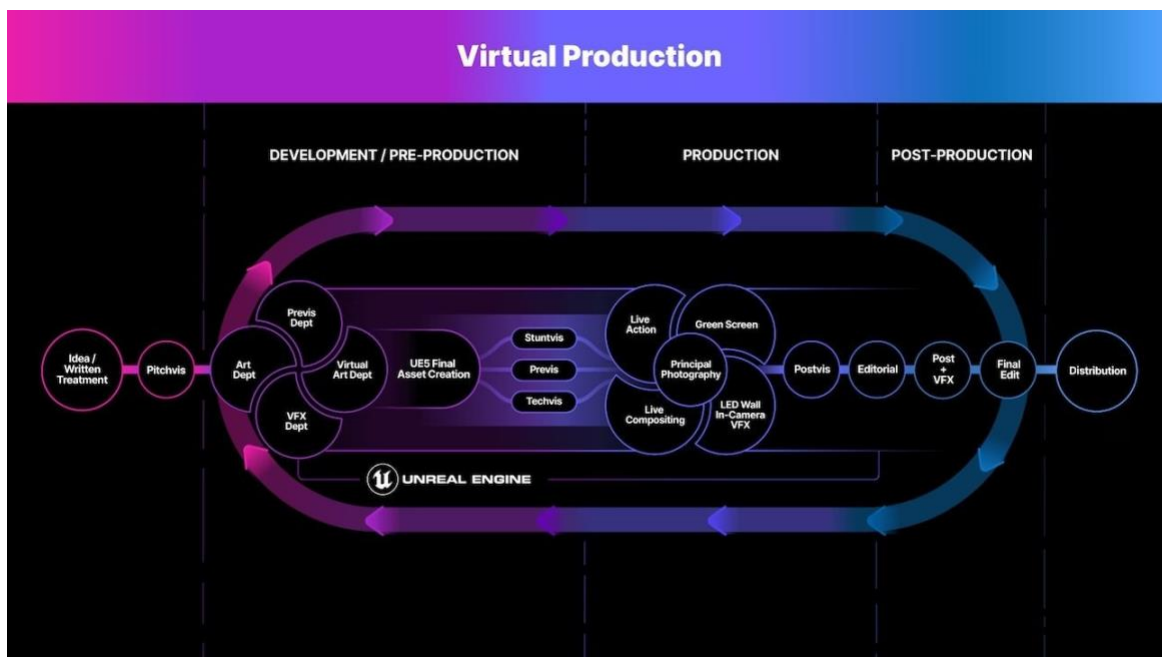


Figure 1. A circular non-linear production workflow enabled by virtual production, illustrating how pre-production, production, and post-production phases become simultaneous and iterative rather than sequential (Epic Games, 2025).

This article examines the Unreal Design workshop, a series of virtual production experiments conducted at the Australian Film, Television and Radio School (AFTRS) across three years. The most recent iteration, *Fire & Ice* (2025), forms the focus of analysis. Conceived within the production design discipline and developed through interdisciplinary collaboration across cinematography, and directing disciplines, the workshop explores how real-time virtual environments might function as pedagogical scaffolding for collaborative authorship. Within the context of this workshop, it is through the lens of production design, crafters of screen space, that the world-first methodology is most clearly articulated. While earlier work has examined the 2022-2024 workshops as a pedagogical response to hierarchical production models (Beak, 2026), this paper shifts focus toward the embodied and sensory dimensions of that collaboration, and toward the iterative pedagogical developments that made these dimensions visible. The 2025 workshop provides a case study to answer the following guiding question: How does world-first virtual production pedagogy enable embodied learning, distributed authorship, and sensory storytelling within interdisciplinary screen education?

Screen production has historically privileged script-first authorship models, often marginalising spatial and sensory contributions to narrative development. Production design, as the discipline most directly responsible for constructing the physical environment in which screen stories unfold, offers a useful lens through which to examine how those marginalised contributions might be recentered. Alex McDowell, once a production designer now a transdisciplinary academic, argues that contemporary storytelling practices benefit from approaches that are more embodied, collaborative and immersive (McDowell, 2019). It is worth acknowledging that collectively devised approaches to narrative have a long history outside of mainstream screen production, but these approaches are often sidelined in traditional film school curricula. Mike Leigh, for instance, developed methods in which narrative emerged through rehearsal, improvisation and direct engagement with performers and environments (Carney and Quart, 2000). Theatre traditions of devised practice (Oddey, 1996), and documentary approaches grounded in participatory community co-creation (Cizek and Uricchio, 2022) have similarly centred embodied and emergent narrative processes. Indigenous storytelling traditions also remind us that narrative has long been relational, place-based and collectively held. At AFTRS, students and staff are invited to complete the module titled

Introduction to Indigenous Media and Aesthetics, created by Indigenous knowledge holders Dr Romaine Moreton and Dr Lou Bennett. These perspectives foreground environment, community, and embodied transmission as central to meaning-making. As Moreton writes in the module,

Stories are alive; they are the embodiment of our Ancestors, manifesting them into our present understanding of our world and identities...Oral tradition is inclusive; it is the actions, behaviour, relationship, and practices throughout the whole social, economic, and spiritual life process of people. In this respect, the Oral tradition is the consciousness of the people (2023, n.p.).

Industrialised screen production driven by sequential workflows and commercial indicators has distanced storytelling from this embodied, communal understanding. A world-driven process, supported through virtual production, may offer a way back.

What makes virtual production different to traditional in-camera drama production is the integration of physical and digital space in real-time. With the LED wall, environmental lighting can respond to camera movement enabling space, light and performance to interact simultaneously. The sensory relationships through which cinematic meaning is often discovered are made tangible in the virtual production studio. While scholars such as Zhang (2020) and Bennett (2025) have explored these immersive effects on performance, this paper examines how virtual production makes the work of production designers, cinematographers and directors visible as a collaborative act of authorship.

There is a growing body of research examining virtual production's technical affordances, historical contexts and philosophical implications (Barnett et al., 2025; Mitchell et al., 2025). In commercial contexts, virtual production is often framed as supporting efficiency and aesthetic outcomes; the technology serves a predetermined vision. Situating the process within a pedagogical framework opens up different possibilities, allowing the iterative, world-first workflow itself to become the object of inquiry. By analysing the collaborative, embodied and sensory processes experienced by students, this paper identifies a mode of cinematic meaning-making that it terms *sensory storytelling*—one that unfolds through the interaction between bodies, technologies and designed worlds. The LED wall is an active participant, responding in real-time to the camera. In this sense, the

environment is also story. To understand how virtual production enables this, the paper draws on three interconnected frameworks: World Building methodology, embodied cognition, and distributed creativity.

Theoretical Framework: World Building, Embodied Cognition, and Distributed Creativity

World Building: Environment as Narrative

World Building is a narrative practice developed by McDowell and Juan Diaz Bohórquez where “the design of a world precedes the telling of a story; the richly detailed world becomes a container for narrative, producing stories that emerge logically and organically from its well-designed core” (Diaz Bohórquez, 2014; World Building Institute, n.d.). In his ‘Brief History of Storytelling’ (Figure 2), McDowell maps a shift from early non-linear, oral traditions through the mechanising effects of the industrial revolution, toward what he describes as a “post-cinematic” generative paradigm in which world-building re-emerges as a narrative logic (McDowell, 2019, p. 105). This framing resonates with Juhasz and Lebow’s (2018) manifesto *Beyond Story*, which, although developed within documentary practice, advocates an aligned methodology that supports collective, community-based, and place-responsive forms of media-making. The Fire & Ice workshop used World Building as its pedagogical framework, asking students to design the world space first, from which character and story would then emerge.

As screen media scholar Tara Lomax (2025) emphasises, World Building is neither new nor technology-dependent: “The idea of storyworlds has always been an essential principle of well-developed narratives.” What distinguishes contemporary World Building methodology is its explicit recognition of setting as an expression of storytelling in its own right, where narrative causality stems from the conditions of the world as opposed to plot mechanics or character psychology. World Building positions production designers and cinematographers as cinematic storytellers and co-creators of narrative space. The methodology supports two workflows: “with screenplay” (where existing narratives form blueprints for expanded worlds) and “without screenplay” (where worlds are developed

before stories emerge within them). The Fire & Ice workshop employed the latter approach, asking students to create richly detailed environments from elemental provocations before specific character or story structure was determined.

Importantly, World Building “is not incompatible with traditional production workflows and does not need to supersede other narrative modes” (Lomax, 2025). The aim is not to ask students to abandon existing craft knowledge, but to expand their understanding of where narrative can begin. The conditions of virtual production allow the environment to be immediately experienced during the process of design. Real-time rendering allows the digital assets to be lit and lensed at the point of placement within the engine. There is a continual feedback loop between the production designer and cinematographer, between conceptualising a world and experiencing it cinematically. It is within this circular, world-first space that sensory storytelling becomes possible.

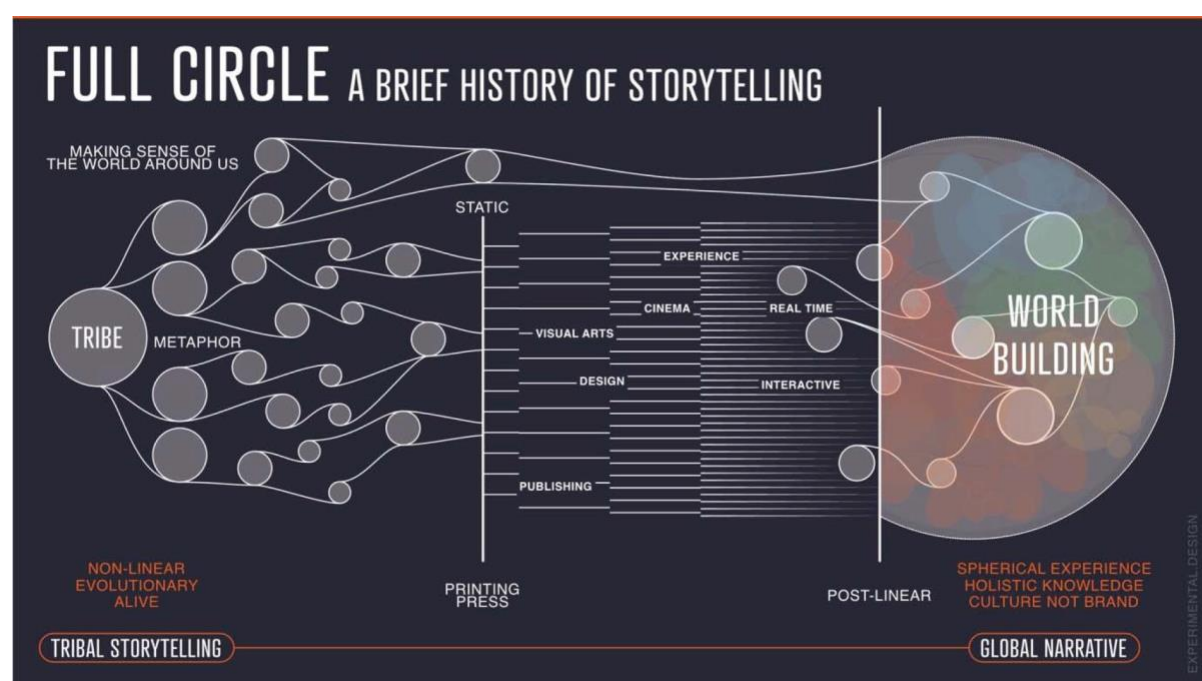


Figure 2. A Brief History of Storytelling, tracing the evolution of narrative from non-linear traditions toward a post-cinematic World Building paradigm (© Alex McDowell, 2019).

Embodied Cognition: Making Tacit Knowledge Explicit

In order to engage with a process of sensory storytelling, we must understand cognition as being grounded in bodily and sensory experience. Rooted in Merleau-Ponty’s (1945/2012)

phenomenology of perception, Lakoff and Johnson's (1999) theory argues that cognition operates in synchronicity with the body and that meaning emerges through physical engagement with space. While much film scholarship applies embodied cognition to spectatorship (Coëgnarts and Kravanja, 2012; Kiss and Willemsen, 2017; D'Aloia, 2021), this project shifts the emphasis to creative practice. In virtual production contexts, cognition unfolds through the practitioners' interactions between physical space and digital technology as creative decisions are tested and revised in real-time. Students inhabited the environments they designed, walking through spaces, perceiving how light shifted across surfaces, and experiencing parallax and scale. This negotiation between physical and virtual elements supports sensory storytelling as an embodied practice of meaning-making, where narrative arises from perceptual experience rather than from pre-scripted dialogue alone. Production Designer and scholar Katriina Ilmaranta theorises precisely this condition through enactive cognitive science, arguing that virtual production enables filmmakers to "simulate not just the narrative surroundings, but on some level, the circumstances of filmmaking itself" (2020, p.326). This maps directly onto the pedagogical conditions the workshop was designed to create, where students encountered spatial and sensory decisions as lived practice. The aim is not to teach students *about* virtual production but to enable them to learn *through* virtual production.

Sound designer and media scholar Mark Ward (2015) distinguishes between *perceptual design* and *narrative design*, offering a useful framework for understanding the workshop's pedagogical framing. Ward defines perceptual design as immersion achieved "through (mostly) pre-attentional, nonconscious mechanisms which process multimodal information," and narrative design as immersion achieved "through (mostly) attentional, conscious mechanisms" (2015, p. 164). His concept of *proto-narrative* explains how affectively linked embodied schemas—recurring patterns of bodily experience through which we make sense of space, movement and time—organise perception prior to conscious narrative structuring. The workshop was designed to develop spatial storytelling capabilities through perceptual design before explicit narrative construction began. Teresa Crea's (2018) neuroscientific account of immersive narrative environments extends this thinking, arguing that meaning-making in spatially and atmospherically constructed spaces is a bottom-up perceptual process that precedes and shapes conscious narrative interpretation. Her research resonates with how students in this workshop encountered

spatial and sensory conditions as generators of story and meaning. Ilmaranta (2023) takes this further into production practice through her concept of *dynamic staging scenario*, in which cinematic movement—of camera and body—constitutes spatial meaning. Drawing on image schema and conceptual metaphor theory, she positions space as cognitively active and not neutral. The LED wall makes this tangible; its real-time responsiveness to camera and light means that spatial decisions and their narrative consequences are immediately experienced.

Distributed Creativity: Making Collaboration Visible

The third framework draws on distributed creativity. Sawyer and DeZutter (2009) argue that creative outcomes don't emerge from individual genius but from dynamic interaction within collaborative systems, through dialogue, improvisation, and collective engagement. Glăveanu (2014) extends this thinking by conceptualising distributed creativity across three interconnected dimensions: sociality (creativity distributed between people), materiality (creativity distributed between people and objects), and temporality (creativity distributed across time). Together they describe creativity as “a simultaneously psychological and socio-material process” (Glăveanu, 2014, p.1) in which agency is distributed across human and non-human actants. The workshop was structured to make these three dimensions visible through practice. Sociality was designed through real-time interdisciplinary negotiation, asking production designers, cinematographers, and directors to co-shape spatial decisions simultaneously. Materiality was foregrounded by treating lighting systems, LED walls, haze, LiDAR scans, camera movement, and performance as active contributors to meaning. Temporality was structured as circular rather than sequential, with the environment, performance, and in-camera synthesis providing opportunities for continuous feedback loops. The aim was to make creativity visible between collaborators, between their interactions with the technology, and across the iterative phases of pre-pro-post.

Methodology and Pedagogical Evolution

The Unreal Design workshop series began in 2022 with Solitary, a conventional virtual production exercise where students realised a scene from an existing script. Students

experienced the challenges of marrying the physical and virtual spaces within a familiar production structure, prioritising technical fluency within a script-led workflow.

The 2023 (Figure 3) and 2024 (Figure 4) iterations shifted toward a world-first methodology. Elemental provocations of Fire, Ice, Air, and later Water replaced the script as the creative starting point, providing interdisciplinary teams generative constraints from which their worlds would emerge. Students developed their worlds spatially and atmospherically, using virtual scouting to discover the story and potentialities around character and plot. Performance decisions and camera movement emerged through dialogue with the LED wall and moving frustum¹, where the environment actively shaped how scenes were staged and inhabited.

The 2024 iteration deepened this approach by integrating music students into the collaborative process, allowing sonic composition to shape the sensory and atmospheric conditions of each world alongside visual and spatial design. Music functioned as temporal architecture that shaped performance, camera movement, and special effects cues in real-time. In the Ice world, an original score informed both the emotional tenor of performance and the timing of the special effects snow, with one student describing the experience as “living within a film” (Zeman, cited in Beak, 2026). In the Fire world, inspired by an Iranian fire festival, a live percussive score developed collaboratively between the performer and music student locked image and sound in real-time dialogue. The SkyPanels² were programmed to simulate firelight in temporal unity with the virtual environment and the rhythm of the percussion. This aural dimension extended sensory storytelling beyond the visual realm, where sound, like the environment, functioned as a generative condition of world-building. While scheduling constraints meant music students were unavailable for the 2025 iteration beyond post-production scoring, both sonic composition and sound design remain priorities for future iterations. Across these iterations, the workshop evolved from technology training into a structured experiment in narrative emergence through embodied, distributed engagement with designed environments.



Figure 3. Fire, Ice, Air (2023): the second iteration of the Unreal Design workshop, marking the shift toward a world-first methodology through elemental provocations. Performers: Dilroop Khangura and Lincoln Vickery.



Figure 4. Fire, Ice, Water (2024): the third iteration, deepening the world-first approach through the integration of music students as collaborative practitioners. Performers: Hamid Rezvani, Monique Placko, Elise Zeman and Eleni Cassimatis.

This study employs a practice-led research methodology (Smith and Dean, 2009), in which the workshop itself constitutes both the site of creative practice and the primary vehicle for generating research knowledge. The Fire & Ice (2025) workshop was designed and facilitated in collaboration with production design lecturer Virginia Mesiti, whose creative contribution to the pedagogical model was foundational. As researcher-practitioner, I engaged in participant observation, attending to how students negotiated spatial, sensory,

and collaborative decisions in real time. Analysis draws on student screenwork and written reflective responses gathered following the workshop, and on my own reflective practice as facilitating researcher. The students are identified by name with their informed consent and have agreed to have their reflective writing drawn upon as research data. The students are introduced here to contextualise the quotations that follow. Fire team: Production Design—Genevieve Douthwaite, Charlotte Layfield; Cinematography—Liam Coleman, Jordan Yankov; Directing—Laura Turner. Ice team: Production Design—Rikkili Clark, Nicholas Warburton; Cinematography—Sarah Whyte; Directing—Nicola Sercombe, Nikita Dunovits-Ferrier.

The 2025 workshop unfolded over six classes across three weeks, with students continuing to develop their work beyond formal class time. Production design and cinematography students formed interdisciplinary teams to develop virtual environments in Unreal Engine, design, build and source physical set extensions, conduct virtual scouting and test lighting coherence across virtual and physical planes. The process culminated in a one-day ICVFX shoot on the AFTRS LED volume.

The introduction of directing students in 2025 marked a significant methodological expansion. Seeking to explore a more dynamic collaborative model than the traditional cine-design partnership, we looked to contemporary television serial drama production as a reference point. In this model, directors enter an established story world and discover performance possibilities within its existing spatial and tonal parameters. For most screen directors, working within this collaborative mode represents the primary reality of professional practice, yet it remains largely absent from film school curricula that privilege the writer-director model.

Unlike the 2024 iteration (Beak, 2026), which foregrounded interdisciplinary co-creation across all participating disciplines from the outset, the 2025 workshop introduced directing students primarily to support performance within worlds already realised by the production designers. The shift in collaborative structure between 2024 and 2025 is illustrated in Figure 5, which maps the disciplinary relationships across both iterations. Music and pre-auralisation, central to the 2024 model, gave way to director and performance in 2025, while production design and cinematography remain the world-building core.

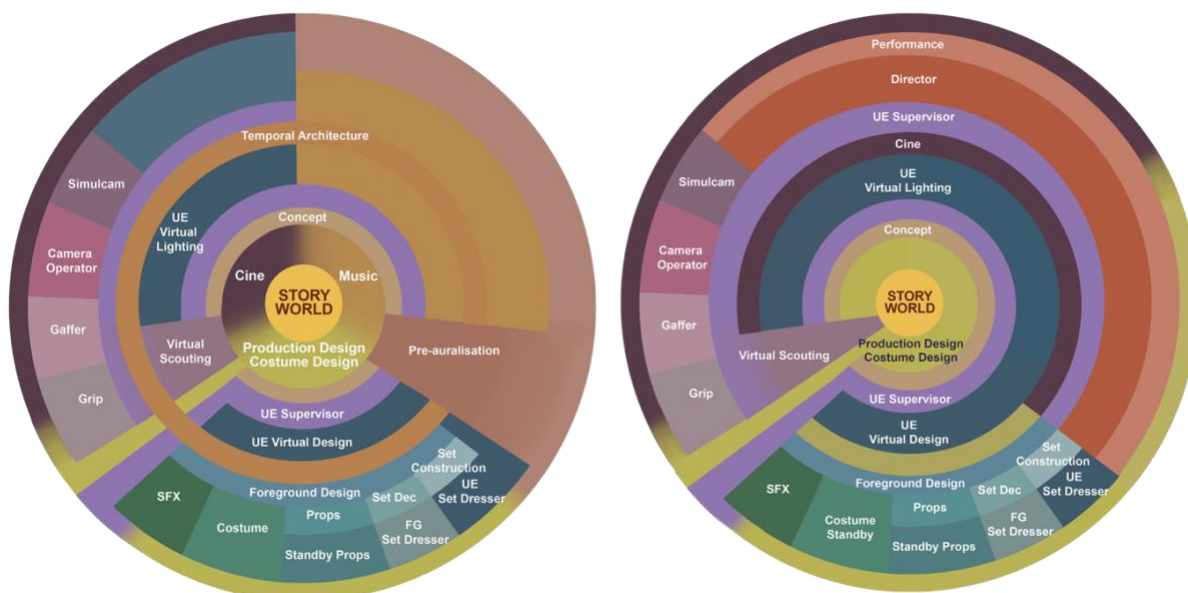


Figure 5. Collaborative frameworks for the 2024 iteration (left) and the 2025 Fire & Ice iteration (right), illustrating the methodological shift between years. The 2024 framework foregrounds music as both a generative design element (pre-auralisation) and sonic atmosphere during production (temporal architecture). The 2025 framework introduces director and performance in the outer rings, reflecting the world-first model in which directing students entered pre-established worlds to support performance. Production design and cinematography remain central to both. 2024 framework adapted from Beak (2026).

The Fire & Ice Case Study

This case study analyses how sensory storytelling materialised through spatial and atmospheric conditions across two elemental worlds, Fire and Ice. The Fire team conceived a medieval fantasy world situated somewhere between *The Witcher* (2019–) and *Game of Thrones* (2011–2019), a realm of ruins where a warrior returned to confront the dragon that destroyed her village (Figure 6). A key challenge of the world was in navigating the representation of the dragon. After reviewing Unreal Engine’s Fab³ store and recognising

the artificial game-like aesthetics of many of the assets, the team instead decided to explore the dragon's presence through absence. The dragon itself existed only as light, shadow and wind, a moving presence created through practical effects rather than a virtual 3D asset on the LED volume. On the director's cue, the gaffer moved a cutter across a studio light, creating a shadow that simulated the dragon flying in front of the sun, while a production design student operating a handheld wind machine sent a gust across the set, activating the warrior's flag as the creature swooped overhead. The performer instinctively ducked away from the combined effect. The dragon existed in the interplay between virtual environment, practical lighting, wind, and performance—a distributed entity that emerged from multiple technical and creative systems.

The Fire team also experimented with *the Mandalorian effect*⁴: the phenomenon where reflective surfaces capture and display LED volume content, creating seamless integration between virtual and physical elements. The warrior's chest plate reflected the virtual environment, making her appear genuinely embedded within the world. Atmospheric effects proved equally crucial. As production design student Genevieve Douthwaite reflected,

The wind and haze were forgiving, meaning that if things didn't line up exactly it was okay. It distracted and blended things like the colour of the rocks, that were slightly off, to a point where they felt the same between the real and unreal.

Douthwaite noted that the atmospheric effects of wind, haze and practical lighting allowed the world to become responsive to the performer, producing a tactile exchange in which movement altered the atmosphere itself. Story emerged through this relational exchange between body and environment.



Figure 6. Fire (2025): a medieval fantasy world in which the dragon's presence was rendered through practical lighting effects rather than digital assets, exemplifying sensory storytelling through absence. Performer: Jessica Carter.

Where *Fire* conjured mythology, the *Ice* world engaged with science fiction and climate futures. The team imagined life after an Ice Age: a lone traveller entering an abandoned laboratory and confronting her own clone preserved in cryo-stasis. With the support of AFTRS VFX supervisor Alex Hoetzer, the team used photogrammetry to generate digital replicas of both a practical cryo-pod prop and the performer herself. The physical pod, repurposed from a 1980s telephone booth, was captured using smartphone LiDAR and reconstructed in Unreal Engine. The resulting digital asset was duplicated and embedded within the larger laboratory environment, creating the illusion that the single physical pod the performer could touch was one among many identical units extending into virtual space. A scan of the performer enabled her digital double to appear within the pods on the LED wall, producing an uncanny encounter between the performer and her virtual clone. Low fog obscured the seam between studio floor and LED wall while evoking a familiar sci-fi motif. Lighting temperature and intensity were matched across practical and virtual pods, requiring constant adjustment. The students worked responsively, manipulating the practical SFX, camera movement and performance in a synchronised dance.

An unconventional creative decision was the choice to shoot every setup twice—once on digital (ARRI Amira) and once on 16mm film. Whilst shooting on 16mm required advance planning, it was the experimental framing of the workshop itself that created the conditions for students to explore other formats. This decision emerged from student questions around the ontology of virtual production: what happens when analogue celluloid technology encounters a cutting-edge LED volume. Sarah Whyte, the cinematography student, was very deliberate in her lens choice, using vintage Zeiss Super Speeds on the digital Amira to soften its typically crisp sensor output, and Zeiss CP2s, which are a clean lens with little distortion, to maximise clarity on the 16mm camera. The 16mm camera was tracked and integrated into the VP system in the same way as the digital camera. One practical consequence of shooting on film is that the footage cannot be viewed live in the way digital capture can; it requires chemical processing before it can be seen. On set, students worked from a proxy image provided through a video split, which was noticeably grainier and lower in definition than the Amira feed. The full textural qualities of the film stock only became apparent through viewing rushes and in the editing process, where students discovered that the softness of the analogue image diffused the hard-edged precision of Unreal Engine renders, integrating physical and virtual elements more seamlessly than digital capture (Figure 7). As Whyte noted, “The grain and texture of the 16mm film assisted with this melding and created a better sense of one consistent space”. Directing student Nicola Sercombe observed that the analogue texture introduced a sense of nostalgia: “It made the [screenwork] feel like it was an old film artefact found in the ice apocalypse itself...film brings a consistent tone and neatly orientates viewers in a specific style that is associated with vintage or realism”. This embrace of analogue technology within a cutting-edge digital workflow embodies the experimental ethos of this pedagogy: rather than accepting technological determinism (virtual production must be shot digitally because it is digital technology), students interrogated assumptions and tested alternatives.

Beyond the technical experimentation, the introduction of directing students into the Ice world highlighted the distributed nature of authorship. When the directing students first entered the studio, the LED wall was dark; the physical set and digital world had not yet fused. Sercombe described the initial disorientation, “Without seeing it in action, it was hard to orientate ourselves.” Once the LED wall loaded, the physical and virtual elements synthesised into a single coherent world space. “Ideas, themes, questions took shape,” she

noted. The directing process became one of discovery within the world before them. This shift unsettled conventional assumptions about directorial control. As Sercombe reflected, the experience felt “freeing,” allowing performance to emerge through interaction with the environment. She also noted a heightened attentiveness to collaborative balance: ensuring the production design and cinematography students were satisfied before moving on to a new set-up. In this context, authorship was negotiated collectively.



Figure 7. *Ice* (2025): four frames from the editing process comparing 16mm film capture (left) and digital capture (ARRI Amira, right) across two setups. The students discovered that analogue softness diffused the precision of Unreal Engine renders and produced a more materially coherent integration of physical and virtual space. Performer: Jessica Carter.

The final setup of the *Ice* shoot was an establishing shot in which the world itself carried the narratological weight (Figure 8). Seen only from behind, the performer lifts her goggles before exiting frame. Using Unreal Engine, the production design team had designed a mountainous landscape with a brutalist structure embedded within. Angular and stark, reminiscent of German Expressionist architecture, its mass and position were designed to activate schemas of threat and containment. This is Ilmaranta’s (2023) space as cognitively active, where the environment constitutes meaning through its own conditions. Virtual

production allows worlds to be built at a scale that makes this kind of spatial storytelling possible; environment as story.



Figure 8. *Ice* (2025): the establishing shot in which the designed environment carries the narrative weight of the sequence. The performer is seen only from behind, leaving the brutalist structure embedded in the mountainous landscape to activate schemas of threat and containment. Performer: Jessica Carter.

Significantly, the final credits for this piece list the two production design students first, followed by the cinematography student, then the two directing students. Determined independently by the directors, this credit ordering signals a tangible recognition of distributed authorship. As Sercombe explained, “I highlighted the designers first as they were the driving forces behind the project and the world builders. The vision began with them which was then complemented by Sarah the cinematographer”. In choosing to credit the world-builders first, the directing students acknowledged their contribution to story.

A recurring pattern that emerged across three years of Unreal Design workshops was recognised when Virginia Mesiti and I were preparing our joint ASPERA 2025 conference presentation: each cohort had independently chosen to frame an extreme close-up of the human eye reflecting its constructed world (Figure 9). In *Ice* (2023), the aurora borealis sparkled within the pupil; and in 2024 and 2025, firelight flickered across it. Without prompting, students recognised the technology’s affordances and gravitated toward this convergence of world and body. This pattern highlights a central premise of the workshop: that narrative meaning can emerge through embodied engagement with designed environments. The eye became a site where virtual space, physical performance, lighting, and camera synthesised into a single embodied image. The eye is a powerful cinematic image that pre-dates LED volume technology, and it is Ward’s concept of proto-narrative

that helps illuminate why such images carry narrative weight. “Proto-narrative is the flow of affect which occurs before and below the logic of consciousness and the narrative self” (Ward, 2015, p. 167). The subjective experience of moving through time is shaped by affect, which non-consciously marks up significant objects, spaces and actions in the environment. The eye shot works because it condenses that affective journey into a single image — a fusion of body and environment. The students actively manipulated the immersive affordances of the LED wall, demonstrating technical skill and an instinctive understanding of how to use the technology for storytelling. The technology allows literal visualisation of a character seeing and being seen by their world.

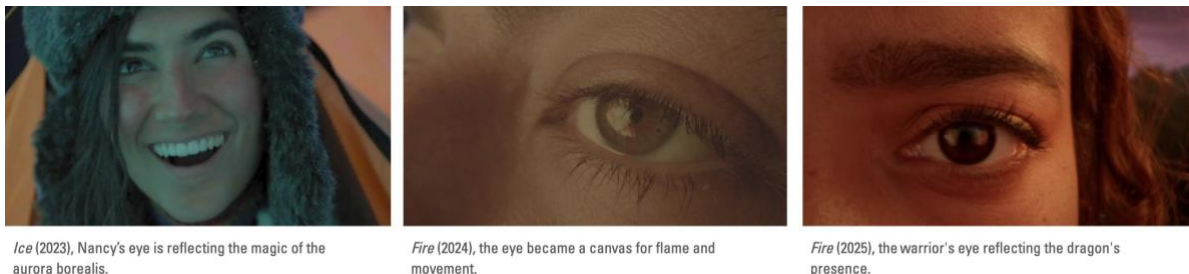


Figure 9. An extreme close-up of the human eye reflecting its constructed world, a compositional choice made independently across three cohorts: Fire, Ice, Air (2023), Fire, Ice, Water (2024), and Fire & Ice (2025). The convergence of body, environment, and perception is condensed into a single image. Performers: Dilroop Khangura, Hamid Rezvani and Jessica Carter.

Discussion

Fire & Ice demonstrated that world-first virtual production pedagogy can enable embodied learning, distributed authorship, and sensory storytelling within interdisciplinary screen education. In a virtual production studio, light and space are dynamically connected where the world changes in response to camera movement. Whilst practical lighting effects are possible with a traditional shoot, in virtual production this synthesis is embedded within the technology and far more visceral when creators are enveloped within the LED volume and physical world space. Students work across the physical and virtual planes simultaneously, anticipating how adjustments in one domain recalibrates perception in

the other. Genevieve Douthwaite captured the multisensory intensity of the experience: “When I was able to hold the lance, feel the wind, smell the haze, then watch the world move, it felt as though I was there. Despite building it, each time I saw it on a monitor, I couldn’t help but feel somewhat like it could be real”. She had built the world and knew it was constructed, yet experienced it as something more. The spatial literacy students develop as both maker and participant is technical and aesthetic, relational and embodied.

Throughout the workshop, authorship functioned as negotiated practice, distributed across disciplines, bodies and technology — what Glăveanu (2014) describes as a socio-material process in which agency extends across human and non-human actants. Directing students discovered story within spatial, material, and sensory conditions shaped by production design and cinematography. Whilst this mirrors a serial television model, this redistribution of authorship within a director-led screen program was not seamless. A directing student remarked — in a comment captured through observation during the shoot rather than written reflection — “You know what could help this exercise in future? A script!” Rather than viewing this as criticism, I read it as evidence the pedagogy was working, challenging deeply held assumptions about how stories are made and who makes them. This student’s desire for a script reflects legitimate discomfort with uncertainty, with the messiness of emergent process, and with ambiguity about authorial control.

The most significant contribution of Fire & Ice lies in the articulation of sensory storytelling as a pedagogical model. Both Fire and Ice worlds demonstrate how designed space can generate narrative meaning that a screenplay alone may never uncover. The Fire world’s dragon-as-light exemplifies this; rather than incorporating a digital creature into the world (perhaps a more conventional linear approach utilising VFX), the team rendered presence through absence. This choice emerged through active negotiation with the technology and in-the-moment experimentation. The Ice team also foregrounded the affordances of virtual production, creating a digital double of the performer she could encounter directly. In the Ice establishing shot, the performer exits frame, leaving the brutalist structure embedded within the landscape to carry the narrative weight. These moments demonstrate what Ilmaranta (2023) describes as spatial meaning constituted through cinematic movement. Space is cognitively active, shaping narrative through its own conditions.

Sensory storytelling, as evidenced across *Fire & Ice*, operated at a proto-narrative level where meaning gathered across time through light, performance, environment and technology. Narrative emerged without a formalised script or conscious plotting. Embodied iteration, distributed authorship, and sensory storytelling are interconnected conditions. Each depends upon and enables the others. When students inhabit environments in real time, authorship distributes naturally across disciplines and technologies, and narrative can be understood as emerging from that collective and sensory process.

Conclusion

World-first virtual production pedagogy opens up space for narrative discovery. When production designers, cinematographers and directors share a responsive, designed world, story can emerge from the spaces in between. This does not position world-first methodologies as superior or as replacement to script-first approaches. The model instead offers a more expansive understanding of what screen practitioners understand story to be and how it can be collectively made. When educators create conditions for embodied learning and genuine co-authorship, story does not have to begin with a script. Virtual production is a productive model for this kind of exploration. Its real-time responsivity makes the relationship between light, environment and cinematic space immediately tangible.

Across three iterations, disciplinary configurations and provocations evolved — music gave way to directing, elemental worlds changed, collaborative structures shifted, yet the core pedagogical logic remained intact. This suggests the framework is not dependent on any particular configuration but on a commitment to world-first thinking, embodied iteration, and distributed creativity. In a world of rapid technological change and increasingly immersive experiences, screen storytelling itself needs to evolve. Perhaps a world-centred approach — one that is collectively realised — is one way forward.

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¹ The frustum is the virtual camera's field of vision, which updates in real-time as the physical camera moves to produce correct parallax and perspective on the LED wall.

² ARRI SkyPanels are programmable LED lighting units that can be synchronised with Unreal Engine in real-time via a DMX control system, allowing physical studio lighting to respond dynamically to changes in the virtual environment.

³ Unreal Engine's Fab store is a marketplace operated by Epic Games where creatives can purchase, download, and integrate pre-built digital assets directly into Unreal Engine projects. In virtual production contexts, these assets can be deployed onto LED volumes as real-time backgrounds and set extensions.

⁴ The Mandalorian (Favreau, 2019-) is a Disney+ series filmed extensively using LED volume technology, in which the title character's reflective armour visibly captures the surrounding virtual environment.