

# EXPERIMENTAL ANIMATION AS PEDAGOGICAL PRACTICE

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*Figure 1: Experimental Movement Skills workshop - Paper Cutouts - by Min Young Oh*

## INTRODUCTION

The effect of animation on learning has been the subject of several studies involving undergraduate students and primary education children (Lowe & Schnotz,) with evidenced effects on the effect of animation on language learning (Kittidachanupap 2012). While experimental animation has long been neglected as a pedagogic strategy, recent research (Honesty Roe 2013; Harris, Husbands, and Taberham 2019) points to their inherent potential for learning and teaching. This research presents two examples of experimental animation applications for student learning across two UK universities: The MOVEMENT skills workshops series -a recent pedagogic research activity between the University of Greenwich and the University of the Arts London- investigates the potential for experimental animation to contribute to learning through experimental skills workshops (Figure 1). In combining diverse conventional and unconventional animation techniques within a non-narrative space, experimental animation practices promise to offer a rich contextual background for learning. The AHRC-funded p\_ART\_icipate project highlights the potential for experimental practices to bridge the gap between undergraduate research and practice-based skills development: Together, these two pedagogic activities examined the following research question:

*‘Are experimental animation techniques an effective instrument for teaching and learning?’*

Across these two case studies, we discuss whether process-led, participatory, research and innovation-focused workshops have the potential to yield tangible learning outcomes and outputs, in that students are able to co-author their own experimental approaches. This paper presents both an analysis into the mode of the MOVEMENT workshop series and the KIMA: Noise project - part of the p\_ARTicipate research - in analysing formats, outputs and outcomes and critically reflecting on the potentials and pitfalls of an experimental, process-based mode of facilitation.

### **Experimental Animation**

Early discussion of experimental animation of the 60s and 70s in the seminal ‘Experimental Animation’ by Russett and Starr (1988) defined experimental animation in broad terms: Experimental animation practices serve as an elemental strategy in exploring and defining new aesthetic approaches but also offer a creative and conceptual playing field beyond an explicit statement of ideas (compare: Taberham 2019). This freedom of artistic expression and animation techniques builds an ideal foundation for practice-based learning (Fenton-O’Creevey et al. 2014, Strati 2007) and play (Wohlwend & Peppler 2015). However, research on the role of experimental animation as a learning tool remains limited.

Experimental Animation has seen recent interest in academic discourse (Taberham 2022, Furniss 2009, Harris 2019, Wells 1997) with renewed interest in the history of experimental animation through a heterogeneous mix of practices and genres. While multiple concurrent definitions of experimental animation exist and compete, several defining factors have been highlighted as emergent key characteristics in recent academic debate: Harris even goes so far to state that the absence of a clear definition, and the negation of characteristics such as non-linear, non-narrative, non-objective, non-normative forms part of the essence of what constitutes ‘experimental’ animation (Harris 2022). Hamlyn and Smith refer to both conceptual and aesthetic qualities of experimental animation in positing that animation is experimental “when it pursues aesthetic enquiry, is creatively daring, innovative and original (Smith & Hamlyn 2018, p.5). Paul Taberham (2022) points to the fact that experimental animation is not per se a genre, but rather concribes a multitude of different practices, techniques and approaches. There are however common traits that emerged, indexed by Taberham as the following:

- Often created by an individual or a small collective
- Often self-financed or financed through a small arts grant without the ambition to result in profit
- Rather than commercial distribution, they are often distributed online or via art galleries, museums or film/animation societies

Furthermore Taberham lists a series of conceptual characteristics including:

- They frequently show more than they tell
- Absence of psychologically defined protagonists
- Relevance of surface detail and materials employed

Lastly, Taberham points to the preeminent role of the artist in transcending their emotions in evocative ways. It is this third element that seems to be most relevant for a pedagogical role for experimental animation as a strategy for self-expression, self-discovery, and improvisation. Taberham suggests the outline of an anthology of experimental animation, when distinguishing between several waves of early experimental animation - an early wave consisting of first pioneers exploring abstract moving image including (Richter, Ruttman and others), a second wave 20 years later around the artists Len Lye, Oscar

Fischinger, Mary Ellen Bute, Jude Engels and a third wave of avant-gardists which includes Norman MacLaren, John Whitney, Harry Smith (Taberham 2022). While a deeper understanding of the principles of animation can be gained from studying its pioneers and trailblazers, the communalities between these diverse practices remain more relevant to this particular discourse on experimental animation and learning. In particular the focus on aesthetic enquiry championed by Smith & Hamlyn (2018) and the notion of experimental practice as learning strategy are key areas of interests presented here.

Experimental workshops are process-led and participatory in nature, in that students are able to co-author their own experimental approaches. Workshops centre on software-independent experimental skills, with the aim of improving students' employability by preparing them for an ever-changing technical landscape. Innovation-focused, experimental workshops emphasise creative exploration, improvisation, and practice-led research (Candy 2011) investigations into artistic processes. For instance, at the MOVEMENT skills workshops presented here, artist Constantine X also known as Anth0morph was sharing their practice using AI for environment building with students at UAL's London College of Communication and University of Greenwich. Experimental Animation techniques are "a bridge (..) for transforming knowledge into practical ability" (Mobai Chen, 2021). Pedagogical strategies explored by the University of Greenwich's BA (H) Animation have long thought to combine 2D and 3D animation techniques with the teaching of experimental practices. Yet more insights into the effectiveness of these teaching practices are needed.

## **MOVEMENT EXPERIMENTAL SKILLS WORKSHOPS**

Movement is an annual conference tailored to Undergraduate and Postgraduate students, but also to everyone interested in animation and contemporary visual arts in general. The first Movement took place in 2018, at the University of Greenwich, in the form of a one-day Symposium and since then it has grown to include the University of the Arts, London (UAL) and expanded to a series of events such as talks, workshops and screenings. The conference aims to bridge academia and creative industries by inviting artists, academics, and directors to inform university students and academic staff about the most up-to-date creative trends, techniques, and ideas. The talks encourage practical, political, theoretical, or technical discussions on creative projects from industries and academia. They also allow students and visitors to discuss the various animation, CG, VFX, and image-making techniques and through a series of hands-on workshops to experience directly how these can be used in meaningful and original projects. Additionally, the Movement conference provides the opportunity for the students to build professional networks and learn about early career requirements. After the panel talks and the workshops, the experts from the creative industry and academia take time to engage with the students in a relaxing environment arranged for networking needs. This post-event networking session provides students with the opportunity to ask questions, gain insights and seek guidance for the early steps of their career.

The MOVEMENT skills workshops (January 2023 - May 2023) explored experimental animation practices across four domains (performance, dynamic poses, staging and timing and AI/environment design) and measure their effectiveness as teaching instruments through Classroom Assessment Techniques (CATs). The research team consisting of researchers from the University of Greenwich's BA (Hons) Animation and UAL's London College for Communication (Dr Oliver Gingrich, Min Young Oh UoG, Emmanouil Kanellos / UAL) investigated experimental animation practices as an instrument for teaching and learning. The MOVEMENT conference team invited industry professionals to facilitate a series of experimental skills workshops at the London College of Communication (part of

UAL) and University of Greenwich with the potential to explore various concepts and applications of experimental animation as a teaching and learning vehicle.

Among these series of events, an experimental paper cutout workshop facilitated by the artists and academic Min Young Oh proposed activities that centred around improvising skills for storytelling as well as learning problem-solving for storytelling. The workshop ran across three hours with around 12 student participants. Students were using their cell phones to shoot stop-motion with an existing stopmotion studio app. The workshop was organised in groups, with four groups in total and three to four students per group. Students were given just 20 minutes to choose images from various magazines, a task that was executed individually without sharing their choices with the rest of the group. After 20 minutes, participants shared their selection with group members in order to come up with a narrative storyline, using the images that they cut from the magazines. Across the following 30 minutes, students were encouraged to create a storyline and to plan out how to shoot their story. Within their teams, students cut the images for animation purposes and planned out movements of the characters, as well as the camera. The overall production i.e. shooting the animation took one hour and half. Students created four comedic, quirky animations - from a trip to the countryside to a battle between a dinosaur against a mother hen. The most common feedback by the attendants, was that new methods of creativity had been explored, which was the aim of this experimental workshop design (see Figure 2 & Figure 3).



Figure 2. MOVEMENT Skills workshop.



Figure 3. Paper Cutout workshop

### Experimental Charcoal Workshop

The second example of the MOVEMENT experimental workshop series was facilitated by artist and animator Ana Caro. The aim of the charcoal workshop was to understand the advantage and disadvantage of straight forward animation (as opposed to pose to pose animation) and to learn about the unique properties of charcoal by physically trying this approach to animation. Student worked individually in groups on a shared theme set by the artist - the concept of 'flames'. Students were given ten minutes to quickly storyboard their ideas, undermining the idea of straight forward animation. No limits were set for duration. However, the workshop ran for three hours only. The majority of students were unsure how to achieve their vision through this medium. The facilitating artist demonstrated an example, which helped the students' understanding of the process and supported their learning significantly. There were six animations created, and the final composite was screened at the Picturehouse Greenwich Cinema as part of the MOVEMENT conference Summer Festival 2023. Following the activity, students noted how important the freedom of trying new process and the physical nature of the activity were, and how these impacted their understanding of production processing and learning new techniques with an unfamiliar medium (see: Figure 4)



Figure 4: MOVEMENT Skills workshop - Charcoal workshop w. Ana Caro

Another skills workshop example is AI motion capture. Recognising the advancements of new technologies this supervised workshop brought together AI technological sophistication and human creativity in a DIY method. The participants of this workshop did voluntarily acted in a series of video-recorded experiments in a film/photography studio setting. The videos were imported in real-time into the Rokoko ([www.rokoko.com](http://www.rokoko.com)) motion capture online application where the movement of the participants was captured from the recorded videos with the use of AI technology. The motion capture information was transferred into 3D rigs and subsequently into 3D characters. The last step of the process was the rendering of the mocap animations. In the remaining time, the technical support team was available to answer any questions and help the participants with troubleshooting. Overall, the workshop demonstrated the entire mocap pipeline effectively - from acting to 3D animation.



Figure 5: MOVEMENT Skills workshop - AI mocap w. Manos Kanellos

## P\_ARTICIPATE - EXPERIMENTAL RESEARCH WORKSHOPS

The AHRC funded p\_ARTicipate research project investigates strategies for the design and facilitation of participatory online art for health and wellbeing. Led by the University of Greenwich, and partners CNWL NHS Foundation Trust, Brunel University and collaborators, this research brings together stakeholders across artists - The Analema Group, public institutions (RNIB, National Gallery), the SME NeuroCreate and charitable partners (Joy of Sound, Noise Abatement Society); Through co-design and co-development of multi-sensory participatory art experiences, the research aims to shed new insights into the effect of such art on social connectedness and wellbeing. Across four case studies with several vulnerable groups (young people, visually impaired and participants with access needs), the team is exploring innovative facilitation and accessible design approaches for online interfaces for art experiences, such as the artwork *Zeitgeist* (Gingrich & Rahman, 2021). Since 2011, the art collective Analema Group created participatory, immersive experiences with a focus on visual sound. Their research practice explores the intersection between sound and matter, often involving the audience as co-author of their multi-sensory artworks. The p\_ARTicipate research project furthers some of their artworks in this new participatory online context: *KIMA Voice*, originally commissioned by the Centre for Performance Science, and presented at the *Event Two* exhibition at the Royal College of Art, consists in an interface for the representation of vocal harmonies between two people. Through a series of co-design workshops with the charity Joy of Sound, the artwork is adapted for beneficiaries with access need. In a similar manner, the art collective and the research team revisited the artwork *KIMA: Colour*, originally conceived at a residency with the National Gallery, London. Across four focus group sessions with the Royal National Institute of the Blind, the artwork was revisited to become more accessible to visually impaired audiences. Together, these co-design workshops helped to gain new insights into good practices in the design of participatory online interfaces.

The Analema Group's artwork *KIMA: Noise*, originally presented at the Tate Modern, London, presents a participatory interface on the effect of urban noise on health. Under the p\_ARTicipate research umbrella, this was revisited for online audiences: Through feedback sessions with students and young people at The University of Greenwich and Brunel University, the research is aimed to further the understanding of design and facilitation of participatory online art, but also to raise awareness for the effect of noise on wellbeing. In collaboration with a key expert on the effect of noise on health, Professor Stephen Stansfeld, and the Royal Borough of Greenwich, students at the University of Greenwich engaged in a series of participatory art workshops: *Playfully*, students learned about the interplay between urban noise and health while being invited to respond to the topic through their own creative practice. In experimental workshops, students provided feedback on the new development by the Analema Group - an online map that invites citizens to stream their noise experiences globally so to share with each other. In response to this artwork, and supported by artists, scientists and the local council, students then workshoped their own creative responses to result in a joint exhibition at London based gallery Cable Depot. The project exemplifies the potential for experimental practices to contribute to impact through awareness building around significant effects of urban noise on health.

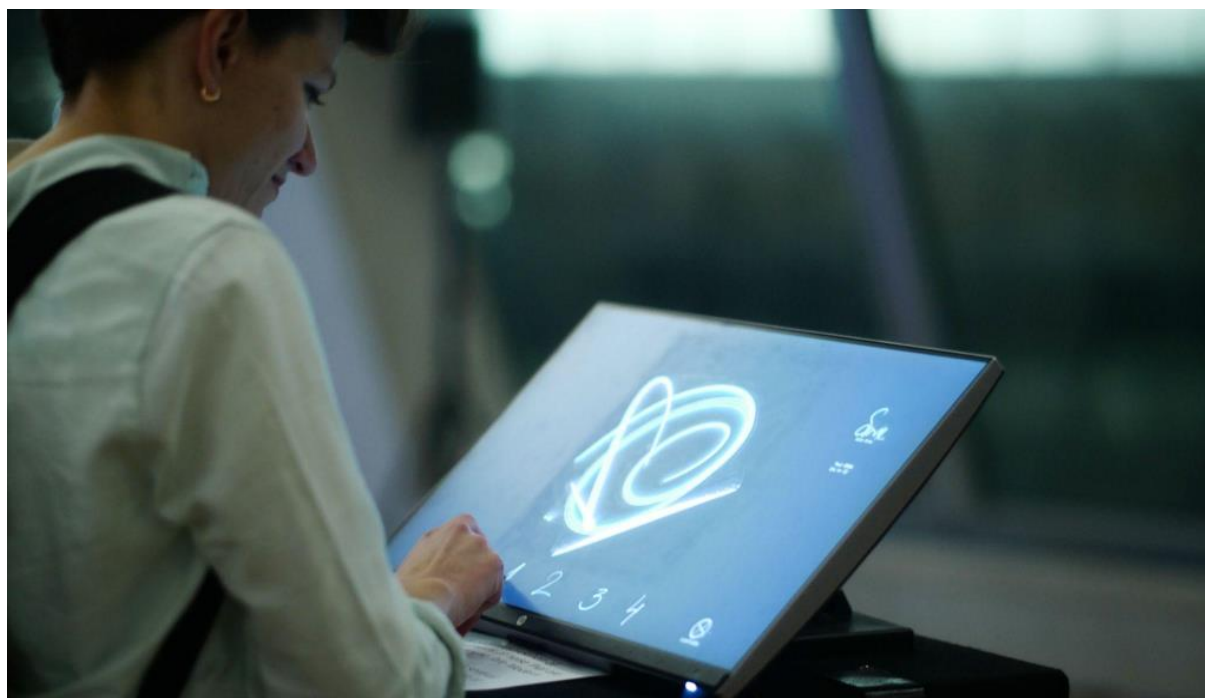


Figure 6. KIMA Noise by The Analema Group at Tate Modern. Image Sophie Le Roux.

## DISCUSSION

Student feedback for both activities, experimental skills workshops and experimental research-based workshops, was resoundingly positive. In a user study with students, following the KIMA Noise workshop, a student sample of fourteen students (n=14) reporting an elevated mood with average mood values increasing from 3.79 to 4.29 following the activity. A small survey among experimental workshop participants with a sample size of six (n=6) reported that experimental practices were conducive to their learning, with 63.2% strongly in agreement and a further 31.6% reporting to be in agreement. 47.1 % strongly think that experimental practices support their creative expression, with another 35.3% agreeing with this statement. On the question about the most important thing learned within the workshops, students commented on the usefulness of these practices for their future:

*“Trying new tyings which can be useful in the future, and being inspired to continue doing and learning new things.”* Another student report that *“..there are so many interesting pathways into animation and many different ways of doing it”* Although anecdotal due to the small sample size, both qualitative and quantitative feedback point to the effect of experimental workshops on student learning with respect to techniques, skills and research focus.

## CONCLUSION

Experimental animation practices date back to the origins of animation, and intrinsically led to the development of a distinctive genre with clearly identifiable characteristics. As a pedagogical strategy, experimental animation has received little attention, despite obvious key features that make them an ideal candidate for teaching on animation practices. These include a focus on trial and error, over a product based output, the importance of play, improvisation and discovery, the decoupling of process from narrative, and the lack of need for large budgets and relative freedom from technical conventions. For students, experimental animation can be an ideal playground to explore their own styles, visual

explorations, free from the need to result in a structured, narrative. As a constructivist method, experimental workshops emphasise self-directed creative learning, supporting students artistic self-expression as well as a degree of pedagogical knowledge of learning valuable to the students.

Whether 2D, 3D, motion-capture, AI, or software based work, there are no limits to the fields of experimentation for students to choose from, with a history of heterogenous experimental animation pioneers providing inspiratino and a wealth of diverse techniques available for students to engage with. This paper exemplified some of these diverse strategies to introduce experimental animation practices to students through workshops, a conference and by combining research and practice. A constructivist learning method.<sup>1</sup> ensures an emphasis on creation processes over output artefacts, which reduces upward pressures for students, ensuring a degrees of freedom across animation techniques. From a

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<sup>1</sup> George Hein, Constructivist learning theory. *Institute for Inquiry*. Available at:<http://www.exploratorium.edu/ifi/resources/constructivistlearning.html>. 1991

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pedagogic perspective, the benefits are multifold in that students are invited to play to their own strengths, unearth new processes without the risk of failure, and emphasis creativity, concept and play over a product-based output.

While the benefits of experimental animation for pedagogy are evident, much more needs to be done to provide systematic analysis of applied case studies, including on student uses and gratification feedback, and value based learning outcomes. Future research will need to adopt a much more focused approach: Rather than providing overview of pedagogical avenues, more work is needed to understand how experimental animation can support skills transfer and software-based learning too.



*Figure 7: MOVEMENT Skills workshop - Charcoal workshop w. Ana Caro*

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