

The potential of online object-based learning activities to support the teaching of intersectional environmentalism in art and design higher education

Abstract

In 2019 University of the Arts London (UAL) declared a Climate Emergency and undertook to make sustainability a required part of the student learning experience. Subsequently, in 2021, UAL published an anti-racism action plan and declared itself an activist university. These initiatives require educators across UAL's six constituent colleges - of which Central Saint Martins (CSM) is one - to underpin creative arts learning and teaching with an understanding of global ecologies and societal structures. Since the advent of the COVID-19 pandemic a considerable amount of this teaching has been delivered online.

This case study seeks to understand how established teaching practices, such as object-based learning (Chatterjee et al. 2013; Willcocks 2015; Barton and Willcocks 2017) and experiential learning (Kolb and Kolb 2017; Schon 2017) can be mobilised to support student understanding of these complex global and societal issues in an online learning environment. We also address the challenges and benefits of teaching art and design subjects using educational technology and ask whether experiential pedagogies can be successfully translated for delivery online. To achieve this, we reflect on *Colonialism to Climate Crisis*, an object-based learning event that sought to promote critical awareness of the connections between colonialism and the climate crisis (Brockway 2002; Schiebinger and Swan 2007) using eighteenth and nineteenth century botanical drawings from the CSM Museum & Study Collection. The event was delivered as part of *Creative Unions: Design for Intersectional Environmentalism*, an interdisciplinary collaborative unit delivered for 250 CSM second year BA Graphic Communication Design and BA Product Design during the 2020 - 21 academic year.

The findings presented in this case study are based on data gathered from students taking part in the *Colonialism to Climate Crisis* event. We analysed a total of 153 end-of-unit feedback forms and 25 reflective journals, which describe the student's learning process and their proposed project-based outcomes. We used thematic analysis to surface themes from the data and argue that the themes which emerged evidenced enhanced understanding of global environmental issues and illustrate the efficacy of object-based teaching material delivered via digital learning tools. While they also suggest a range of problems associated with digital learning, including screen exhaustion and online disorientation, we ultimately argue that in translating the haptic experience of object-based learning for a digital environment we were able to introduce students to new ideas about environmental justice and propose a replicable and scalable method for other education practitioners working with objects online.



Figure 1 (source: UAL). UAL declared a Climate Emergency in 2019. Here, UAL students march for climate justice at the university's *Carnival of Crisis* parade on 11 November 2021. Courtesy of Ana Blumenkron.

An introductory note on object-based learning

The case study presented in this paper is based on *Colonialism to Climate Crisis*, an online object-based learning event delivered at Central Saint Martins during the 2020 – 2021 academic year. The event formed part of *Creative Unions*, a collaborative unit which seeks to bring together people, ideas and practices from a spectrum of disciplinary and cultural backgrounds, providing opportunities for learners to work with peers from different courses. We gathered data about the *Colonialism to Climate Crisis* event with a view to finding out:

- a) to what extent the introduction of objects to the learning experience might support students to develop an understanding around the intersectional nature of the climate crisis.
- b) to what extent experiential pedagogies such as object-based learning can be delivered online using digital learning tools.

As object-based learning is at the centre of our questioning we will begin this paper with a brief outline of the field of object-based learning and its recent inclusion in the pedagogies of higher education. We will then go on to describe the teaching intervention and associated research activity.

While objects have long been used to support teaching practice, Paris (2002) was the first to explore museum-based object-centred learning as a distinct academic discipline. Since 2002,

when he published his book on *Perspectives on Object-centred Learning in Museums*, there has been a surge of interest in activating museum and archive collections in support of the learning experience, moving beyond traditional models of subject-specific knowledge transmission towards a more nuanced understanding of the potential of objects to instil new ways of thinking or seeing. *Perspectives on Object-centred Learning in Museums* was based on the experience of public museums and focussed on informal learning and schools education. However, in more recent years the university sector has enthusiastically embraced object-based learning with a view to enhancing the classroom experience. University College London (UCL) has been a key player in defining the field of object-based learning in higher education and advocating for its value as an experiential pedagogy embedded within multiple curricula (Chatterjee, 2007; Duhs, 2010; Chatterjee, Duhs and Hannan, 2013; Chatterjee and Hannan, 2015; Kador et al., 2018).

Chatterjee, Duhs and Hannan (2013) have argued for the potential of object-based learning to address troublesome knowledge, make abstract concepts more concrete for learners and develop a range of transferrable skills including research, analysis and critical thinking. However, their evidence-based studies were associated with courses in the humanities, sciences and social sciences where object-based studies are more normally used to enhance the learning experience alongside more traditional forms of information dissemination. In other subject areas, the scales may be more heavily weighted towards the object encounter. For example, Steele (1998), working in a fashion history context, argues that object-based research is actually the most valuable generator of knowledge production. Recently, a range of authors have explored the specific relevance of object-based learning to art and design pedagogy. Boys (2010:47) has argued that objects are key reference points for art and design students, while Cook (2010) and Willcocks (2015) have suggested that museums should support learning experiences that utilise all of the senses including sight, sound and touch, recognising the importance of non-verbal or embodied knowledge to art and design practitioners.

In the last decade, objects have been repositioned within art and design pedagogy as focal points for self-knowledge and self-reflection (Barton and Willcocks 2017) and inspiration for playful or creative thinking (Campbell 2019) with the potential to support and encourage collaborative working across disciplines and (Lange and Willcocks 2021). Lange and Willcocks (2021) have also argued that object-based learning has an increasingly important role to play in contributing to the decolonial agenda, challenging the myopic viewpoints which alienate a large proportion of the student community. At UAL, where this case study is based, object-based learning has been included in the *UAL Learning, Teaching and Enhancement Strategy* since 2015, which has encouraged the ongoing development of object-led research and curriculum content. Prior to the advent of the Covid-19 pandemic, all of these activities were delivered via face to face handling sessions.

The *Colonialism to Climate Crisis* event: a case study

As part of this portfolio of object-based learning and teaching activities, the CSM Museum & Study Collection has been contributing to the *Creative Unions* collaborative unit for a number of years, developing curriculum content that mobilises museum objects in support of the unit's chosen theme. In this instance *Creative Unions* focussed on *Design for Intersectional Environmentalism* and sought to introduce students to the complex processes that connect the 'injustices happening to marginalised communities and the earth' (Thomas 2020). While this case study specifically addresses the *Colonialism to Climate Crisis* event (one of four events that scaffolded Creative Unions in 2022 - 2021) it is also worthwhile to explain something of the aims and ambitions of the wider collaborative unit, as the event was designed to align with and support these.

Creative Unions is a level 5, 20 credit unit, taught over five weeks, during which second year BA students work in small, cross-course teams to identify and address a context where social and environmental issues intersect. 250 BA Graphic Communication Design and BA Product Design students took part in the iteration of the unit described in this study. However, previous iterations have included up to 500 design students working collaboratively across multiple courses. The Italian design academic Ezio Manzini defines collaboration as taking place when people 'encounter each other and exchange something... in order to create shared value' (Manzini 2015). While several accounts of teaching interdisciplinary collaboration in art and design institutions exist (Alix, et al. 2010; Blair 2012; Kelly 2017), almost all share this positive understanding of collaboration as exchange and its valuable role in dismantling disciplinary silos.

In *Creative Unions: Design for Intersectional Environmentalism* collaborating teams were required to produce a project-based outcome addressing 'an environmental issue through the lens of intersectionality, promoting equitable design processes and practices'. Students were introduced to the concept of intersectionality forged by Black feminist thought in the 1970s and 1980s (Crenshaw, 1989) and to the way social and physical identities such as race, gender, class, disability and sexual orientation intersect to create or exacerbate privilege, discrimination or oppression (Collins 2002; Lykke 2010; Case 2016). They were then introduced to the term intersectional environmentalism, coined in May 2020 by the US environmentalist Leah Thomas, to call for the environmentalist community to stand in solidarity with the Black, Indigenous and People of Colour communities impacted by social and environmental justice (Thomas, 2020). While acknowledging existing indigenous, activist and academic knowledge (Mumbi Maina-Okori et al. 2018) the term generated a renewed urgency to think holistically about the interconnectivity of being and the land. Finally, students were asked to consider how notions of intersectionality play out in the field of art and design and encouraged to consider how their practices might seek to remedy an 'unequal distribution of benefits and burdens' (Costanza-Chock, 2018). Students were assessed holistically through the submission of two tasks: a team delivered presentation that communicates their collaborative project and an individually produced 2,000 word reflective journal.

The *Colonialism to Climate Crisis* event supported the wider unit aims by encouraging students to explore the impact of colonialism on the current climate crisis through the lens of eighteenth and nineteenth century botanical illustrations from the CSM Museum and Study Collection. The half day online event required students to engage with a combination of background reading and listening and expert talks exploring how the colonial project was associated with the mass exploitation of the natural world. As the event progressed, we anticipated that students would come to understand how the global impetus to investigate and record the natural world was closely linked to colonial models of invasion and extraction. Visual analysis of botanical illustrations would then act as a focal point for discussing how the colonial roots of global warming are reflected in current geopolitical phenomenon.

We provided a variety of background reading and listening, including TED talks, podcasts and academic articles, to introduce this sensitive topic. It was important for us to acknowledge that the legacies of colonialism play out in a very real and violent way for many of our students at CSM, and we asked those participating in the unit to be mindful of how discussions around colonialism may impact others. Content warnings were shared with students throughout, alerting them to the potential for the event to raise complex and difficult emotions for those with lived experience of racism.

The event began with a short talk, delivered synchronously via Microsoft Teams, exploring the relationship between colonialism, botany and botanical drawings. Schiebinger and Swan (2007: 2) describe the phenomenon of ‘colonial botany’ and the process by which many plants entered large scale international commerce on terms advantageous to Europeans, while Brockway (2002: 6) explains how plants like sisal, rubber, tea and sugar became a significant source of wealth and part of the ‘comprehensive system of extraction’ developed by the emerging Colonial powers. During this period indigenous agricultural systems were destroyed, local labour forces were exploited and large scale, export orientated monocultures replaced more sustainable farming practices. The Colonial desire to map, understand and exploit the natural world for economic gain, often at huge scale, is now seen by scholars and environmental activists as the genesis of the current climate crisis (Drayton 2000; Brockway 2002; Macmillan Voskoboynik 2018).

The talk explained how botanical illustration was a key component in the machinery which sought to monetise plants. Voyages of discovery (generally government funded and allied to the armed forces, trading companies or botanical gardens) ensured that thousands of specimens were acquired and identified by European botanists during this period. Due to the difficulty of getting live specimens back to Europe, much botanical study was based entirely on a combination of dried herbarium specimens and illustrations made in the field (Saunders 1995). These illustrations (for example see Figure 2) were published in books and magazines, such as *The Botanical Magazine or Flower Garden Displayed* published by William Curtis in association with the Royal Botanical Gardens at Kew. Specimens were often shown in isolation from any wider natural habitat, on a blank background (Saunders 1995; Fowkes Tobin 1996). Thus the European scientific community encountered plant

specimens in ways which encouraged them to be viewed purely in terms of potential economic exploitation rather than as parts of a symbiotic ecosystem.



Figure 2 (source: CSM Museum & Study Collection). *Solanum Elaeagnifolium*, a native species of Chile, from *The Ladies' Flower Garden or Ornamental Perennials* by Jane Loudon, 1844. This image was analysed and researched by students taking part in the *Colonialism to Climate Crisis* event. Courtesy of CSM Museum & Study Collection.

Shreeve, Sims and Trowler argue that in the arts, we learn by 'doing and making' (Shreeve, Sims and Trowler, 2010: 128) and that opportunities for experiential learning (Kolb, 1984) are key for students who are developing a practitioner identity. As such, we felt it was important to explore the experiential opportunities offered by the available online tools. As a pre-learning task each collaborating team was allocated a botanical illustration from the Museum's collections. Images of these illustrations (all of which depicted plants native to the Global South) and basic information about each were shared via a Padlet page – a freely available digital noticeboard where users can upload text, image and web links. Each group was asked to do some research around their image discuss:

- 1) What climate related issues are experienced in the geographical location of their image
- 2) What social issues are experienced in the geographical location of their image
- 3) How the Global North has had an impact on that region through colonialism, consumption or in other ways.

Teams were also asked to come to the event armed with one interesting fact and one image to illustrate each of the above points, and were required to upload these to an interactive global map (see Figure 3 below) offered by the Padlet platform. Time was scheduled during the event to explore the map, which inevitably evidenced the ongoing impact of environmental exploitation in previously colonised nations.



Figure 3 (source: UAL). Interactive global map showing uploaded student content, 2021. Courtesy of Kieran Mahon.

Following the mapping activities, the students were introduced to a methodology for visual analysis first suggested by Gillian Rose in her book *Visual Methodologies* (2012). Rose argues that the visual is central to the cultural construction of society and our understanding of phenomenon such as the sciences. She describes paintings, drawings, photographs and films as offering a view of the world that cannot be transparent or innocent and suggests a four staged approach to analysing visual objects in a way that encourages careful consideration of how, when and where those objects are made or consumed. She describes these four stages as four sites: the site of production, the site of the object, the site of audiencing and the site of circulation.

Site of Production	Who made the image, where and how?
Site of the Image	Its visual content and composition
Site of Circulation	Where and how the image travels over time and space
Site of Audiencing	Where and how the image is encountered by its spectators or users.

The students were asked to apply the four stage visual analysis methodology to a botanical drawing of their choice from the CSM Museum & Study Collection. Again these were shared via a Padlet page (for example see Figure 4). A worksheet was drawn up explaining the value

of the four site analysis and outlining some ways it might be applied. It was suggested that some questions the students might ask of their chosen drawing might include:

- What you know about who produced this object?
- What you think motivated them?
- Who would have consumed the object when it was first published?
- How has the object travelled over time? Or across the globe?
- Who do you think is viewing it now? And what are they seeing?
- How does your understanding of global power dynamics influence your understanding of the object? Does it make you see the image differently?

Student teams met in online breakout rooms to work with their digital object and were invited to share some thoughts with the wider group when they returned to the main online classroom. While presentations and talks were recorded, breakout sessions were not with the aim of creating a safe space where students could share their ideas freely. Students were specifically asked to:

- Share your experience of using the Rose system of visual analysis. Did you find it useful? Or did you find it frustrating?
- Point out one thing you spotted or realised as a result of using the Rose methodology. What did it help you to think or see?



Figure 4 (source: CSM Museum & Study Collection). *Gladiolus Cardinalis*, a native species of South America, *The Botanical Magazine of Flower-garden Displayed*, published by William Curtis, 1790. This image was

analysed and researched by students taking part in the *Colonialism to Climate Crisis* event. Courtesy of CSM Museum & Study Collection.

The use of learning technology to deliver the *Colonialism to Climate Crisis* event

Bower (2020: 1) has suggested a typology of education technology tools ‘that can be used via a browser to promote more productive and interactive learning’ which is useful for framing the following discussion. From ‘text-based tools’ through ‘multimodal production tools’ such as videos and podcasts to ‘synchronous collaboration tools’ such as Teams, Bower outlines the variety of technologies available to support online learning. We used a combination of text and image-based tools (including Padlet worksheets and an interactive map), asynchronous learning resources (including a short films shared via a Moodle portal) and synchronous teaching (including presentations and breakout discussions hosted in Teams) to deliver the *Colonialism to Climate Crisis* event.

Knowing how diverse our student population is at UAL (with high numbers of neuro-diverse students) we were mindful that choice of formats is key to making information more accessible. Instructions given during online learning activities were also given in multiple formats including text, oral and diagrammatic form. We benefited greatly from the knowledge and experience of colleagues who were teaching short courses online pre-pandemic. Their training and knowledge sharing sessions were key to helping us understand the need to break content up into shorter chunks, schedule regular breaks and use the chat and poll functions to build a sense of community. All online teaching sessions were recorded and made available after-the-fact with closed captions as an option. This provided opportunities for students to go over material they have found particularly useful (or confusing) in their own time.

Research design and methodology

Due to the advent of the Covid-19 pandemic and UAL’s call to action regarding the development of curriculum content addressing issues of social, racial and climate justice, the *Colonialism to Climate Crisis* event involved the delivery of new teaching materials, using a new set of tools and testing out new ways of delivering haptic or experiential learning online. As such, we wanted to assess whether the inclusion of object-led activities had helped students develop an understanding of the intersectional nature of the climate crisis. We also wanted to understand the extent to which experiential pedagogies such as object-based learning can be successfully translated for delivery online

Clearly the students were going to be our best source of data to explore these issues, but as this research took place during the pandemic, when students were frequently asked to evaluate new modes of content delivery, we felt that we shouldn’t be asking them to fill in yet another questionnaire. We therefore decided that we would collect data from a number of pre-existing sources. As standard practice, students are asked to fill in an end of unit feedback form at the end of each *Creative Unions* unit so that became our first data source.

We wanted to pose a question that promoted self-reflection and that might prove useful to the students as well. The question specific to the *Colonialism to Climate Crisis* event read:

In our third Creative Unions Event (From Colonialism to Climate Crisis), we asked you to work with museum objects (botanical prints). How did working with these objects introduce you to new ideas?

In addition, we asked a series of more generalised questions that probed the wider unit. While the moved beyond our research questions they also proved a source of some relevant information:

Which part of the collaborative unit did you enjoy the most?

What is the one thing that most needs to be improved to promote student engagement in the collaborative unit?

Thinking about your overall experience of the collaborative unit, are there any other particularly positive or negative aspects you would like to highlight?

Finally, we decided to carry out an analysis of a sample of the reflective journals handed in by each student at the end of the unit describing their learning journey and proposed project outcomes. We anticipated that these would add breadth and depth to the data acquired from the end of unit feedback forms and reveal more about the extent to which students had gained an understanding of the intended learning outcomes for the unit.

Ethical data collection

All research undertaken at UAL undergoes a rigorous ethics procedure and is expected to meet the requirements set out in the *UAL Code of Good Conduct in Research* and *Code of Good Practice in Research Ethics*. Proposals must be submitted to the relevant College Research Committee (in this case CSM) and signed off before the research can take place. As we were working with data gathered from students in the course of their study we were required to secure active permission from the students to use the data in our research.

For data gathered via the end of unit feedback form this was achieved through a check box explaining our research and plans to publish and asking students to say whether or not they would allow us to use their data in this way. Students were also made aware that the forms would be anonymised before they were accessed by the research team. Of the 250 students who attended the event, 153 gave permission for us to use their data from the end of unit feedback from.

Personal emails were sent to every student in two randomly selected tutor groups outlining our research proposal and aspiration to publish and asking for permission to analyse their reports and (where appropriate) quote anonymously from their work. Students who did not respond, or who did not give permission to work with their reports were removed from the data sample. We wrote to a total of 50 students and got permission from 25.

Thematic analysis

We analysed the data using the thematic analysis methodology, which offers an accessible and theoretically flexible approach to analysing qualitative data (Braun and Clarke 2006) and is an appropriate method of analysis for 'seeking to understand experiences, thoughts or behaviours across a data set' (Ekiger and Varpio 2020: 1). The methodology allowed us to organise and describe our data set and identify emerging patterns and themes. Much has been written about thematic analysis so we will only provide a brief outline here. A six stage process was first proposed by Braun and Clarke (2006). The stages are outlined below:

1. The researcher familiarises themselves with the whole data set by reading through it in its entirety.
2. The researcher generates initial codes for features in the data that appear meaningful, interesting or relevant.
3. The research searches the codes for emerging themes.
4. The researcher reviews the themes.
5. The researcher refines the themes (collapsing some and revising or creating new themes) and gives them appropriate names.
6. The researcher produces a report based on their findings.

We used a combination of deductive and inductive approaches (Braun and Clarke 2006). A deductive approach was required where we were asking deliberate questions which reflected our research interests, for example in the end of unit feedback form. An inductive approach was required when we were scanning student reports and the more general responses in the end of unit feedback forms to look for emergent themes.

Initially we identified 26 themes across two areas; those relating to the *Colonialism to Climate Crisis* learning journey and those relating more specifically to the experience of learning online. Themes related to the learning journey ranged from students making links between colonial and neo-colonial practices to students evidencing a desire to challenge the perpetuation of colonial mindsets, while the digital-specific themes included discussion of the merits of a variety of online tools and comments about the dynamics of building relationships online. Some of these themes remained as standalone themes (for example where students suggested they would use the Rose analysis method in their wider practice) while others were refined and concatenated (for example the challenges associated with communicating online). A summary of the final themes and the number of students whose data fitted that theme can be found below.

What the data told us

The data derived from the end of unit feedback forms was fairly straightforward and indicated, overall, a positive response to the object-based learning event. In this analysis of the data we will quote directly from the feedback forms and student reports and summarise our findings. Around a third of the students (49) described gaining new perspectives on colonialism or making links between colonial and neo-colonial practices. They evidenced a

realisation that 'art and design is significantly affected by historical and social context' and that 'art itself can further colonialist ideology'. They described how using objects to explore the colonial roots of the climate crisis was an 'innovative way to approach research into such a heavy topic' which helped them to better understand the relationship between the global north and the global south. As one student suggested, 'studying museum works as an entry point is less disorienting than going straight for it'.

A number of students (27) suggested they would use the Rose analysis methodology in other areas of their research and practice and a similar number (27) described the development of an increased capacity to look at things with a critical eye or from a plurality of perspectives - to view things 'from multiple angles', 'make connections' and 'dig deeper into research'. A smaller number of students cited the event as helping them understand their positionality as a designer and the potential of design practice to make positive changes in the world (10). Some (8) felt that the event had inspired them to consider new ways of working or to think differently. They cited having 'adopted a range of new design approaches and considerations' since experiencing the event. However, not all of the comments were wholly positive and we must also take note of the number of students (13) who described feeling confused throughout or who felt a sense of 'disconnection' or even 'chaos' and struggled to understand the relevance of the content to their practice.

Predictably, a number of students also addressed the issues associated with learning online. They discussed the difficulty of working across time zones (4), of building meaningful relationships online (14) and of the exhaustion and general challenges of working online (14). There were also a number of students (9) who discussed the importance of face-to-face contact – of body language or lip reading – to effective communication, and how these essential tools were lost online (9).

The picture emerging from the student reports was understandably more complex, as we were analysing a description of their learning journey rather than answers to specific questions. A significant number of students (18) described gaining new perspectives on colonialism; 'this event really opened my eyes in seeing how much colonialism destroyed nature and how nature answers back'. They cited 'learning from the past' to better understand the way colonial legacies play out today, spurring 'environmental racism and injustice as a whole'. This reflects the responses given in the end of unit evaluation.

However a larger number of students (19) discussed the event as helping them understand their positionality as a designer and the potential of design practice to make positive changes in the world. They described the fact that 'design can never escape from politics' and explored the ways 'inclusive communication practices can bring people together and collaboratively challenge the existing unjust power dynamic'. They suggested this new understanding would steer them away from 'frivolous design' to 'choosing sustainable materials and processes'. To quote one student:

[as designers] 'we need to carefully consider the complex interactions of our privilege, our expert status, our role in amplifying the power of historically marginalised people and whether we have the right to make decisions on their behalf.'

There was evidence (12) that students had gained a greater understanding of intersectional environmentalism, enabling them to 'tackle issues targeting the interconnected injustices happening to marginalised communities and the earth'. There was also evidence (14) to suggest that the event had given students the ability to look at things with a more critical eye as the process 'allowed for a much more in-depth conversation... exploring our biases and cultural relationship with the media'. Other students referenced a new found ability to 'zoom out from the narrow idea of what product design might be' and become designers 'more informed in the social aspects of design'.

In comparison with the end of unit feedback forms, fewer students mentioned the issues associated with online learning in their reports and responses were as likely to be positive as negative. A small number (5) referenced the issues of working across time zones. Some (9) also referenced their use of multiple platforms (including Miro boards, WhatsApp, Padlet and Instagram) or the potential for multi-modal communication (verbal and text-based) to facilitate communication online. A number of students (7) even suggested that they had initially made negative assumptions about the potential of online learning which had generally changed for the better as lines of communication opened up.

The shape of the final collaborative projects as described in the student reports was also revealing in terms of how the *Colonialism to Climate Crisis* event had influenced or inspired the students. They variously designed: a 'Transnational Sustainability Podcast' exploring issues of migration and the way an individual's origins shape their views and experience of the environment; produced a storytelling pack exploring the way class and gender inequalities intersect with sea level rises and the exclusion of marginalised voices from global environmental debates; developed a web-based interactive game addressing the way class, social hierarchy and private wealth drive commercial space travel and subsequent carbon emissions; designed a card game addressing period poverty and the impact of menstrual products on the environment. These projects suggest a sound grasp of the issues around social and climate justice and of the potential of design to make a positive contribution within that context.

Discussion

Gebrial (2018) argues that the university is a site of knowledge production which has the power to decide which histories and knowledges are valued or considered 'worthy of further critical attention' (Gebrial 2018: 19). In developing the *Colonialism to Climate Change* event we were hoping to mobilise online-object based learning activities to contribute to global efforts to decolonise the curriculum through the surfacing of European colonial histories and their influences and impacts (Last, 2018). The research outlined in this case study was undertaken to find out whether the event had introduced students to these complex histories and the way they play into contemporary environmental and design phenomenon. If the activity proved successful, we hoped it might also offer a model for

other higher education institutions to develop online object-based teaching interventions in support of greater racial, social and climate justice.

We acknowledge that the *Colonialism to Climate Crisis* event was part of a wider programme of curriculum content. It was therefore somewhat challenging to define exactly what the students got from the individual event and what they gained from the wider unit. However, when using thematic analysis to surface themes from the data we were very careful to limit ourselves to instances where the students were directly referencing the *Colonialism to Climate Crisis* event and its influence on them. Ultimately, we are confident that the data evidences improved knowledge and understanding of the unit's learning outcomes and changes in student thinking about design practice that can be directly linked to the event.

Perhaps the most successful outcome, and one we would not have recognised without carrying out this research, is the number of students who talked about the event giving them a greater understanding of the power of their position as designers and the potential for their work to address historic climate injustices. This suggests that the enhanced criticality developed through online object-based learning activities allows students to challenge and potentially reframe their thinking for more diverse understandings, approaches and actions. This positive outcome has the potential to impact art and design education more widely as online object-based learning activities can reach huge numbers of students.

The research outlined in this case study also explored the extent to which experiential pedagogies such as object-based learning could be successfully delivered using digital learning tools. We believe that our research has significant implications for others engaging in the digital learning field, from the positives (such as the potential of interactive worksheets and maps) to the challenges (such as the difficulties associated with communicating online). This is a timely moment to address online learning within art and design higher education. The potential for web-based delivery has long been acknowledged by tertiary education providers, and recent research has shown how educational technology can be deployed in the fields of arts and humanities to promote student engagement (Bedenlier et al. 2020; Bower and Torrington 2020). However, prior to the COVID-19 pandemic educational technology was generally under-resourced across the entire education sector Kingsley (2021).

With the arrival of the pandemic that changed overnight, and  education providers across the globe rapidly discovered that while the 'pedagogically informed use of technology' can support the student learning experience (Bedenlier et al. 2020: 127) '... technology alone cannot deliver a solution' (Kingsley 2021: 30). Lesson planning is actually more labour intensive for the online environment than the physical classroom, because it is more difficult for students to process instructions and easier for them get lost. In order to decide what online learning tools supported the delivery of our planned content, we used the 'pedagogy first' model proposed by Sankey (2020) and only began to explore learning tools once we were quite clear about what we wanted to achieve in the online classroom, including active

learning and student collaboration. This is one of our key messages for anyone seeking to develop their own online object-based learning activity – define your content before you explore platforms for delivery.

While we were effectively forced online by the Pandemic, there are clear benefits of taking object-based learning online in terms of the potential for reaching audiences which are larger, dispersed or further afield. Teaching with objects in a physical space inevitably means significant restriction on student numbers, the tedium of running sessions on repeat and potential damage to material through over-handling. Online learning activities can service hundreds of students at a time, making collections more accessible and encouraging broader engagement. This represents a real opportunity for museums which often struggle to connect with 15 – 25 year olds.

There is no doubt that where a digital learning activity is based on a physical collection online activity encourages interest in the real objects. This has potentially positive implications for collections located in or adjacent to higher education institutions seeking to expand and diversify their audiences. However, there is no need to have access to a special collection to run an online object-based learning activity. Many museums share their contents freely online through creative commons licenses and much older material copyright free. The power of objects to tell stories can be harnessed by anyone, whether they have a collection or not.

While we argue in this paper for the efficacy of material delivered via digital platforms, we also acknowledge the issues associated with online delivery. The ‘digital divide’ (Kingsley 2021) means not everyone has access to appropriate technology and we were aware of students accessing material on smart phones and aging laptops, or struggling with poor Wi-Fi signals. In addition, it seems easier for students to get lost online or to simply ‘tune out’ or drop out (Kingsley 2021: 126). These issues surfaced not only in our research but in a wider UAL report, *Lessons Learned: teaching and learning during COVID 19* (Powell, Wodd and Karlin 2020) which describes issues with connectivity, access to appropriate devices, inability to read body language and screen exhaustion.

Student feedback regarding the wider *Creative Unions* unit suggested that online teaching events lasting more than two hours were simply too long, even when segmented with breaks. We argue that this needs to be more widely recognised by those utilising digital learning forums and in future iterations of the project we plan to separate out the different elements of the event for delivery via two shorter sessions scheduled over two days, to give more breathing space for new understandings to develop. It is also important to note that the kind of object-based learning activity is key to success. The activity covered by this article involved a visual methodology which was relatively easy to replicate using the available learning technologies. Other methodologies, which rely more heavily on the participants’ physical engagement with the object and their ability to feel, manipulate and haptically explore it, would not have translated so well.

While we have outlined an activity based on the platforms available at UAL there is a wide range of platforms that can be used by teaching staff who do not have access to these tools. Padlet worksheets and maps are freely available (though those using the free service are limited to having three running at any one time) and there are any number of free online meeting spaces that might serve as virtual classrooms. Similarly, while we have specifically discussed an object-based learning intervention addressing the intersectional nature of the current climate crisis, objects might equally be used to support a wide range of subject specific online learning activities or those addressing the wider issues of racial, social and climate justice. The important thing is to get the students to *do* something, such as an object reading or visual analysis, with the objects as it is through conversation and active engagement that learning outcomes are clarified and reinforced. Some examples, including the Rose Visual Analysis, can be found here <https://arts.ac.libguides.com/c.php?g=686452&p=4906489>.

Conclusion

Orr and Shreeve (2018: 8) argue that creativity must be located in society and ‘inflected through the lens of that society’s values and material circumstances’. In this article we have presented evidence that the *Colonialism to Climate Crisis* event supported art and design students to challenge and better understand society’s values through an enhanced understanding of historical and theoretical viewpoints.

We have argued that with careful planning that addresses the issues associated with online learning – such as the perceived difficulties in building relationships, the risks of students getting lost, and the need for content to be parcelled up in manageable chunks – object-based learning activities can be successfully replicated using a combination of synchronous and asynchronous tools. When encountered online, objects still have the capacity to tell powerful stories and make abstract concepts more concrete for the learner.

We have also specifically addressed the ways objects can be mobilised to support the communication of content that speaks to issues of intersectional environmentalism, both as a tangible illustration of the subject matter and to introduce a methodology for considering the deep history of objects and the way their meaning changes over time. Analysis of data suggests that the intervention described made a significant impact on the students’ understanding of the colonial roots of the climate crisis, the need to work towards equitable solutions and the potential agency of creatives to facilitate that change.

However, we have also acknowledged the impacts of the digital divide and understand that while some students respond well to the online environment, others may struggle either with the format of the learning or with their available technology. As Kingsley points out, we need to ensure that the ‘skills acquired during the pandemic aren’t just forgotten’ (2021: 80), but rather are enhanced and carried into a future of blended delivery. In that context, we believe that object-based learning activities delivered via virtual learning environments have the potential to make a positive ongoing contribution to successful learning outcomes.

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