

# A SLIGHT RETURN: DEVELOPING AN AUGMENTED DESIGN STUDIO PEDAGOGY

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## ABSTRACT

The reorientation to remote teaching due to the impact of COVID-19 restrictions proved to be both challenging and compromising, particularly in the context of delivering practice-based design education. Central to the challenges faced by many design tutors was the loss of the design studio as a focal point for engagement and learning. As an established signature pedagogy of design education, the studio provides an environment for mediated, sticky, social and habitual exchanges in supporting teaching and learning on campus. However, delivering teaching remotely through a period of enforced separation also proved that through adversity comes new insights, with the accelerated use of emergent technologies to support distributed working revealing new behaviours and opportunities for learning to take place. In response to COVID-19 restrictions, the digital whiteboard and collaboration platform Miro was widely adopted within the UK creative industries and universities alike to facilitate remote engagement. Through the period of November 2020 to May 2021 the authors utilised Miro to create an analogue to the physical design studio environment, providing an easily accessible collaborative space for remote sharing of thoughts and ideas. However, as many institutions now begin to reorient back to campus-based delivery it is evident that some of the pragmatic approaches adopted through necessity can hold lasting value beyond crisis modes of teaching. This paper utilises the key findings from a study of remote delivery experiences conducted by the authors in June 2021 to establish clear benefits for the continued application of the Miro on-line platform within a *return to* campus-based delivery.

*Keywords: Design pedagogy, augmented learning, communities of practice, design studio, sticky curriculum*

## 1 INTRODUCTION

A key impact of the COVID-19 pandemic across Higher Education was the accelerated use of emergent technologies, particularly those that supported distributed working to support remote learning. Whilst much has been written about the potential for such technologies to support learning [1,2,3] its adoption within UK Art and Design education has generally focussed on a blended approach via the use of established Virtual Learning Environments (VLE's) such as Canvas, Blackboard, Moodle, etc, rather than a completely digital approach as necessitated due to COVID-19 restrictions. The enforced move to remote teaching delivery brought many challenges to studio-based courses and the traditional modes of delivery that are often associated with UK Art Schools. Central to this was the loss of the design studio as a focal point for engagement and learning. The design studio, as described by Shreeve et al [4] is a space of shared, prolonged, communal activity where the process of making is visible and a focus for comment and debate. Despite the financial pressures on many UK institutions over recent years, communal learning environments have usually been maintained in some form, continuing to offer staff and students a studio-based ethos for teaching and learning [3]. As such "the studio is not just a space marked studio; it represents a way of thinking and learning" [5] and despite institutional pressures, the ethos of studio learning culture remains a strong ambition for many tutors and students. The popularity of the design studio can be considered through four lenses. Firstly, as a mediating artefact in the student learning experience that informs the content and delivery of teaching and influences the approaches undertaken by students. Secondly, as an essential part of creating the sticky curriculum [1] in providing a draw for students to return to and engage in activities together or to see something of collective interest and co-constructed with students. Thirdly, as a social place of exchange for ideas, integration, and synthesis [3] with opportunities for formal and informal peer learning that are dynamic, iterative and

experimental [6]. Fourthly, as a signature pedagogy of creative arts education affording “pervasive, routine and habitual” [7] engagement for students within their learning experience. Across these four perspectives we can recognise that the studio creates the capacity for a structured, communal, habitual learning process that encourages and scaffolds students’ capacity to challenge, experiment and grow. The challenge presented by the COVID-19 pandemic was how to translate some of these aspects of the physical studio into a completely digital environment. Within the context of a UK undergraduate Product Design programme, the online collaborative platform (Miro) was used to create an ad-hoc digital studio environment in response to an inability to teach in person due to the COVID-19 pandemic. Miro was chosen in preference to other on-line platforms such as Padlet or Mural due to its accessibility for large numbers of participants, compatibility with MS Teams and emergent widespread use within professional design practice over the period of the pandemic. Miro provided an easily accessible collaborative whiteboard space for remote sharing of thoughts and ideas.

## 2 REFLECTIONS UPON REMOTE DELIVERY

Following the 2020/21 academic year the authors conducted a study to reflect upon the rapid shift to on-line delivery, considering the ways in which Miro had been utilised to both mirror and transform the concept of the studio. Reflecting on five projects that utilised Miro between November 2020 and April 2021. Miro was used as a platform to structure teaching delivery, share creative content and as an environment to generate dialogue amongst students. The projects delivered across 1st and 2nd year undergraduate product design programme followed a common delivery pattern, each comprising phases of research, ideation, and presentation of final outcomes, however the utilisation of Miro in each project was different. Table 1 summaries the characteristic exchanges on Miro across the different projects.

*Table 1. Characteristic exchanges*

<b>Exchange Type</b>	<b>Exchange Details</b>
Icebreaker/Sandbox:	Tutor led activities introducing students to Miro software but also to the processes of sharing and commenting on peer work.
Individual Pin-up/Crit:	Opportunities to share work and elicit feedback from tutors and peers.
Group Pin-up/Crit:	Opportunities to share work and elicit feedback from the ‘client’, tutors and peers.
Individual Workshop Activity:	Highly structured design-process driven activity, delivered to the whole group but completed individually with feedback from peers.
Shared Workshop Activity:	Highly structured design-process driven activity, delivered to and completed by small groups with feedback from peers.
Individual Tutorials:	1-2-1 dialogue with students, discussing progress and planning forward actions.
Group Tutorial/Seminar:	Dialogue with students to discuss overall progress. Sessions were generally hosted on MS Teams, but students would often utilise their own private group Miro boards to show progress.
Instructional Exchange:	Delivery of the weekly primer activities. These were each located on the Miro board within a defined space for the activity and presented at the launch of each session.
Tutor-led discussions with student groups:	Posing questions and eliciting responses in moderated exchanges to prompt peer review, externalise viewpoints and promote self-reflection.
Asynchronous Exchange:	Via post-it notes placed onto student’s work outside of taught sessions and via peer-to-peer exchanges, posting comments on each other's work.

Analysis of all the activity in Miro established that the platform offered significant benefits in use, both in the absence of, and potentially in parallel with, co-located working. Within each project the Miro spaces quickly created rich, shared, visual repositories that reflected different journeys through the design process, affording new opportunities for participatory engagement overcame barriers of permanence and accessibility that would be hard to recreate in a modern physical studio environment. In brief, the full study [8] revealed three core findings.

Visualise the Process to Create a Mediated Social Space: The capacity to visualise design processes and dynamically navigate through projects within the digital Miro space proved to be transformative in supporting the delivery of remote teaching. Visualisation of design processes enabled the creation of digital scaffolds within which we were able to construct workshops, experiment with modes of thinking and index design methods, and in the process generated a greater sense of awareness of their own learning journeys.

Foster Habit and Routine to Make it Communal: Students working both independently and collaboratively within remote communities of practice reflected the social aspects of physical studio participation, drawn to a common place that holds attraction. Changing the nature of their digital engagement from sharing a screen to sharing a space perhaps emerged through a growing sense of routine and habitual use, in line with Shulman’s identification that working out the rules of engagement creates the time, and confidence to experiment within the digital space [7]. Similarly, the asynchronous use that was evident in several of the projects suggests that the flexibility to access and share content beyond taught lessons emerged as a very positive mode of exchange not always afforded by physical studio environments.

Enable Autonomy and Ownership to Make it Sticky: Student autonomy, ownership and experimentation within the Miro spaces developed over each project as their familiarity with the platform grew. Utilising the elasticity of the digital space and its ability to bring together different media into a shared, accessible environment mimicked the use of physical studio space, wherein the arrangement and application of space is adaptable to the required need. Thus, creating the liminal spaces for ideas sharing and discussion to develop as an environment for sticky exchanges between students, tutors and their subject.

### 3 RETURNING TO CAMPUS

Following the lifting of COVID-19 restrictions during summer 2021 many UK universities began planning a return to campus-based delivery for the new academic year. The identification of mirroring characteristics within the digital studio environment revealed a potential to be utilised either when campus-based teaching is required to be delivered remotely or as part of a blended delivery. Therefore, the opportunity to utilise the beneficial experiences of remote delivery to create symbiotic relationships between platforms such as Miro and the physical design studio environment offered an exciting next step in reimagining the campus-based learning experience. In-correspondence with the key benefits revealed through the previous study a targeted use of digital spaces alongside campus-based delivery was planned. Continuing to offer a digital analogue to the physical design studio environment focused on providing these things:

- Visualising the design process to support learning and navigation.
- Providing autonomy for students to develop their own working practices.
- Enhancing synchronous and asynchronous opportunities for peer and tutorial dialogue.
- Aiding self-reflection.

Table 2 details the augmented campus-based projects delivered between Sept 2021 and March 2022, describing the targeted use of Miro boards within each project.

*Table 2. Augmented campus-based projects*

<b>Projects: 6 weeks duration</b>	<b>Level/Year (numbers)</b>	<b>When</b>	<b>Miro exchanges augmenting campus-based activities</b>
Introductory 2D & 3D project activities	Year 1 (27)	Sept-Oct 2021	Miro used to capture events and create community space for new cohort; share best practice from student outputs; introduce unit/programme/assessment.
Principles & Approaches to Product Design	Year 1 (27)	Nov-Dec 2021	Miro used to map/visualise design process steps; to visually link new content to build depth of thinking in design process; to structure and make transparent assessment structure and portfolio output.
Speculative Design	Year 1 (27)	Jan-March 2022	Miro used for shared knowledge building and a platform for structured workshop delivery.

Product Design Innovation	Year 2 (22)	Sept -Oct 2021	Miro used to map/visualise the process of design through the production of work, connecting methods & activities to stages within the process
Understanding Context RSA Design Awards	Year 2 (24)	Jan-March 2022	Miro used as a collaborative research space; briefs and content resource; portfolio planning for competition submission; sharing of presentation techniques and outputs.
All projects followed a broadly common delivery format, comprising of lectures, taught studio activities, face to face tutorials, engagement with construction workshops and 3D printing.			

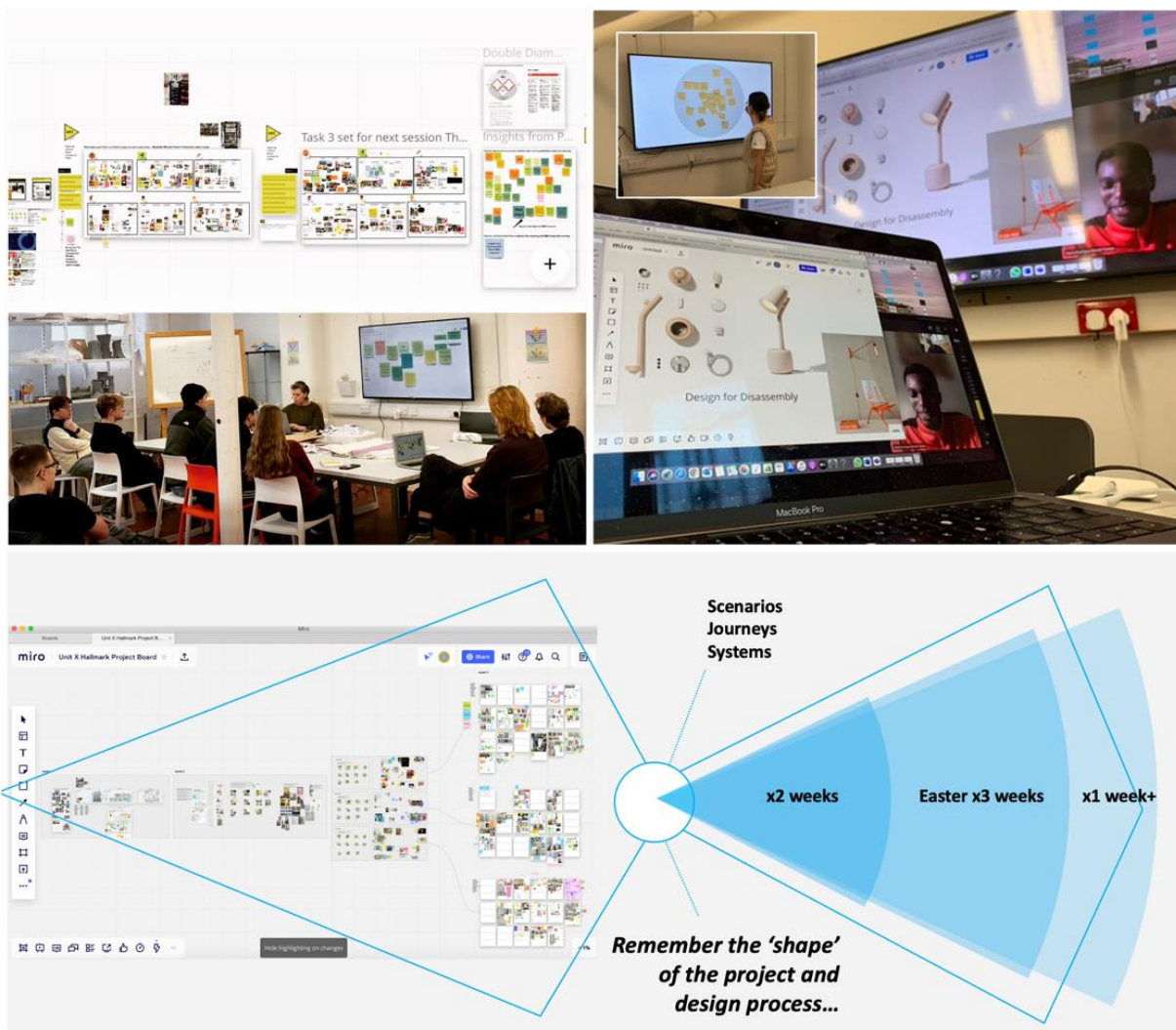


Figure 1. Images highlighting augmented delivery of projects

#### 4 STUDENT FEEDBACK

Following delivery, all 51 students engaged with the projects were asked to reflect upon their experiences of using Miro on-line spaces alongside campus-based delivery. Questionnaires were administered via the Mentimeter on-line voting platform of which 27 anonymised responses were recorded. Specifically, students were asked to consider: the relevance and usefulness (or not) of using Miro alongside campus delivery; if they enjoyed using Miro boards, engaging in group boards or constructing their own; to describe the benefits Miro adds to their learning, such as aiding self-reflection. The feedback questions were designed in correspondence with the author's 2021 study findings and were intended to help establish their ongoing relevance in the context of campus-based delivery. The student responses were reviewed and thematically analysed to identify commonalities. In order to articulate the

responses coherently a representative selection of direct quotations have been included in the questions and feedback summary below.

Question 1 asked if Miro project boards were still useful in supporting a better understanding of the design process, connecting design methods and navigation of the process visually?

Responses to this were overwhelmingly positive, comments included that “it helps to show the project broken down to better understand each part” and that “it helps show the steps of the project as we go along, and I like how it is accessible at any time.” Further comments added that “It allows us to maintain and develop a visual representation of our journey and it makes a nice temporary archive, convenient to go back for information we store on it.” The ability to use Miro boards as quick and easy reference points was highlighted frequently within the feedback comments, such as “I really enjoyed the blend physical/virtual learning that Miro provides. The online space allows me to instantly refer to or add to my work.” The comments here suggest that Miro continues to support the understanding of the design process and enables students to navigate through each stage of a project as an effective visual reference. Question 2 asked if Miro continues to provide useful autonomy and ownership for students to construct project work and developing their own working practices?

A number of comments to this question referred to personal approaches being adopted, such as “Miro for me helps in the ideation and development of projects for product design. Being able to lay out all your research in a digital format and collate everything really helps to explore ideas and progress them further.” and “I’ve created my own separate Miro space for many of the projects because it’s a space where I can organise and rationalise my thoughts and insights. I also add images of the Miro boards to my final submission boards because of this.” These comments describe an enhanced ownership and understanding of their process and outputs, being able to communicate their individual practice through seeing their process as a whole, as well as individual ‘portfolio’ boards.

Question 3 asked if Miro provides meaningful opportunities for peer and tutorial dialogue?

Many students commented on value of “seeing what others are doing alongside your own for inspiration.” In addition, that “Miro was incredibly easy to use and very effective when sharing and communicating ideas with the rest of the class” so that “Multiple people can collaborate with each other on the same board by adding ‘post its’.” It was also recognised that “it is what other professionals said they use, when they have come in for talks” and that “Miro boards are a great way to share learning and they are also good for keeping track of work - e.g., organisation.” Further comments highlighted that “it benefits our learning and also helps us visualise different key lessons or lectures.” This feedback highlights an appreciation of seeing peers’ work during a project. It also suggests that key points from lectures are being revisited. Being able to relate to visiting professionals who describe also working on Miro suggests that using this ‘industry standard’ platform builds confidence in the students’ employability skills.

Question 4 asked if Miro is a useful aid for self-reflection?

Comments here highlighted a holistic view of Miro, such as how “It is best used when reflecting on projects” and that “When submitting final portfolios, the Miro boards are great to refer back to.” “Miro has significantly contributed to my learning by providing a space where I can organise and collate my thoughts. I like that it’s a virtual space, meaning that those insights are saved in the space, so I can also add notes or refer back.” Being able to revisit Miro project boards during projects suggests that students are reflecting upon their work and work of peers as a part of their practice.

## **5 DISCUSSION & CONCLUDING REMARKS**

Analysis of student feedback questionnaires suggested that the ongoing use of digital tools such as Miro continues to be valuable in contributing positively to learning experiences within the context of campus-based teaching. Three key benefits have emerged from the student feedback. Firstly, the visualisation of the design process as a whole ‘project picture’ enables students to see clear connections between project content and allows the sorting of content to help define design directions. Secondly, the ability to construct and review their own practice by sharing work in progress throughout and across projects facilitates a deeper level reflective dialogue. As their practice is now much more visible, not just at presentation points, students can be seen ‘live’ (via cursors) reviewing their work and that of their peers throughout projects. Thirdly, the relationship to professional practice is of high importance to the students. Therefore, using Miro as a sharing platform and live link with external industries throughout projects creates a professional mode of practice in which the students can build identity and feel confident in a space where their outputs can be seen by industry partners at any time. Though it is evident

through the delivery of projects included in this study that not all students fully engaged in using the Miro platform alongside their campus-based activities, no negative feedback was received regarding its use. Though it is evident that embedding Miro into every project has created various editing and ownership issues as the number of boards has grown over time. The auditing and longer-term stewardship of boards will need to be addressed as part of a core delivery model.

While the return to campus-based delivery across many universities has been welcomed by staff and students alike, the experiences of remote delivery and the accelerated use of distributed working technologies has driven an examination of established norms. In considering future design pedagogies that support the mediated, sticky, social and habitual exchanges essential to delivering design education, it is evident that platforms such as Miro can continue to be a highly valuable resource in supporting and *we believe* enhancing physical studio-based delivery. It is hoped that this topic resonates with EPDE Conference delegates as we seek to establish collaborative partnerships to further explore research towards the development of future design pedagogies.

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