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Citation:

CORAZZO, James and GHARIB, Layla (2021). Everyday routines and material practices in the design studio: why informal pedagogy matters. *Design and Technology Education: An International Journal*, 26 (4), 144-164. [Article]

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Everyday Routines and Material Practices in the Design Studio: Why Informal Pedagogy Matters

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Abstract

This study aims to improve understanding of the design studio as a setting where formal and informal pedagogies intersect. We argue that the informal dimension of learning has an essential but under-acknowledged role in contributing to the development of design students. Our research focuses on students' everyday routines and their associated material practices in both a proximate studio setting (physical), – such as making tea, speaking to peers, doing work – and in a distance (online) setting. We frame these activities as *informal pedagogy* that supports design learning and the development of designerly identities. While this study focuses on students' accounts of their everyday use of the physical studio (pre-pandemic), it is augmented with students' accounts of distance design education (during the pandemic). The disruption to studio practices, and the subsequent use of alternative environments to learn design, provided an opportunity to reconsider everyday routines and material practices at both proximate and distance settings. Supported by the infrastructure of the physical studio, we identify five 'functions' of informal pedagogy and use this to observe how these functions operated in distance settings. To understand the intersection between formal and informal pedagogy, we argue that binary terms are unhelpful and instead argue for an axis that runs from formal to structured informal to unstructured informal to social.

Keywords

design studio, design education, informal pedagogy, formal pedagogy, distance education, social learning

Introduction

This study presents the studio as a setting where formal and informal pedagogies intersect. We explore this intersection in the physical studio (before the pandemic) and during a year of pandemic displacement to understand the role of students' everyday studio routines and to discuss the implications for design education.

The Design Studio

The design studio takes many forms and encompasses a wide range of methods, environments and patterns of interaction across a range of disciplines and institutions (Cennamo, 2016). While this suggests the studio is a mutable entity, the literature consistently points to studio conversations – between tutors and students – as the primary means through which learning is promoted (Logan, 2006).

Studio conversations represent the cornerstone of formal pedagogy, and while they can happen in different ways, two modes dominate. First, the desk crit, a conversation between a single tutor and student emphasising support and being non-judgemental (Shaffer, 2007).

Second, the critique, which often occurs in groups, is led by tutors and emphasises articulating decisions and making judgements. The desk crit and the critique are the most visible aspects of studio education and have typically attracted the most attention. They are also components of a broader studio system.

Shaffer's (2007, p.116) study of an architectural studio describes a coherent system composed of 'cycles of production and reflection'. Production refers to the design work (driven by a project), and reflection (prompted by feedback) leads to further iterations of design work. The cycles of production and reflection (See Figure 1) work at various scales; larger cycles are augmented by smaller, less formal non-judgmental ones that take the form of desk crits and are designed to encourage further reflection and iteration. These cycles remind students that work is never complete and 'always on a pathway toward better iterations' (Brocato, 2009, p.42). These cycles support learning to design, but they also undertake a parallel function: for students to learn to think and act like designers. As Shaffer (2007, p.21) notes, "students were not merely solving problems; they were engaged in an iterative process of expressing—and thus shaping—their identities."

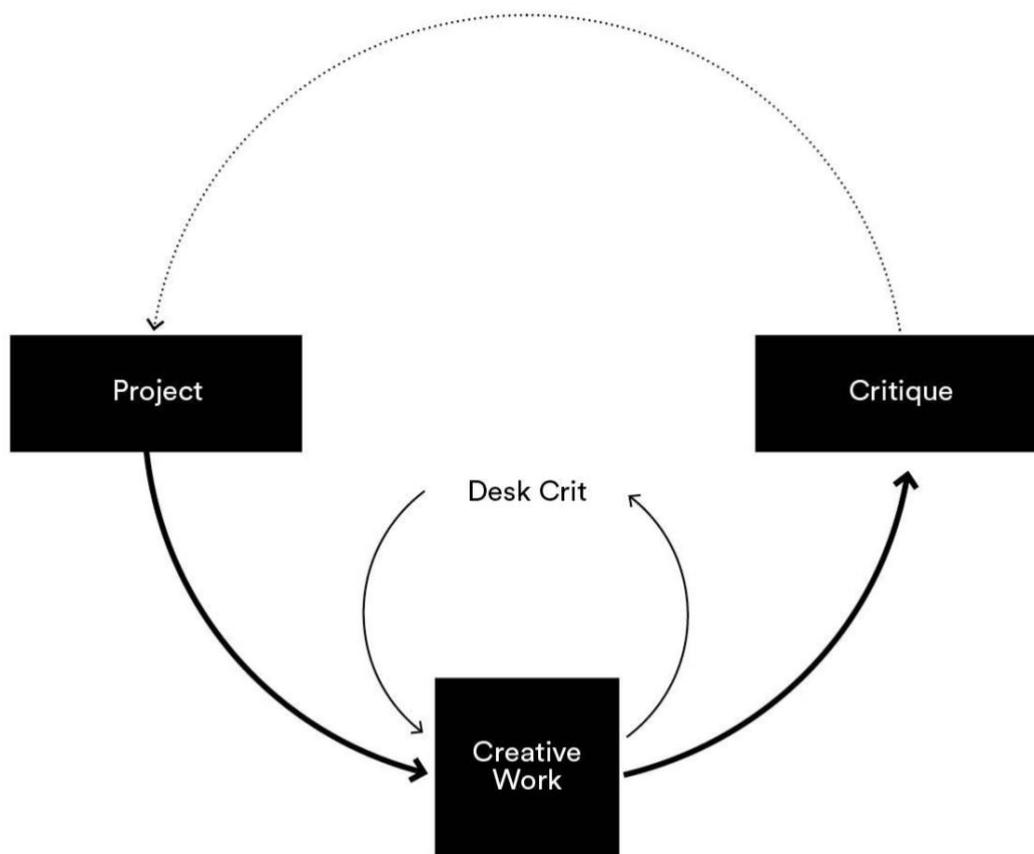


Figure 1. Cycles of Production and Reflection (adapted from Shaffer 2007)

Formal and Informal

Much of the research on the conversations in studio environments between tutors and students (Schön, 1987; Dannels, 2005; Shaffer, 2007; Cennamo & Brandt, 2012) positions discourse as the primary means through which students learn to design and think like a professional designer. Design knowledge is developed through the experience of doing (Schön, 1983) and supported by the right kind of telling (Cennamo & Brandt, 2012). Composed of crits, desk crits, briefing, workshops, seminars, these scheduled and serendipitous encounters between tutors and students constitute the formal pedagogy of the studio.

We turn our attention to the time spent undertaking design work outside of formal interactions. We understand these activities as students' everyday routines and material practices – the low hum of activity and inactivity: students working at laptops, talking, moving around to see what is going on, making tea, looking, reading, laughing, cutting out, folding. Notably, researchers have given less attention to this aspect of studio life despite occupying most design students' time.

We argue these seemingly mundane activities have an essential role in learning to design. Although largely ignored in the literature on proximate settings, they also require closer attention at distance settings. Therefore, as Gray and Howard (2014) state, to develop a better understanding of the whole student experience we should consider what is usually out of view (for example informal pedagogy) a significant part of learning design and becoming a designer.

Our research examines students' accounts of everyday studio practices to explore how informal pedagogy intersects with formal pedagogy. We are interested in the role of the physical studio in supporting informal pedagogy and its instantiation in distance settings. To address these aims, we created three research questions:

1. What are the everyday routines and material practices of both proximate and distance studio settings?
2. How do these everyday routines and material practices (informal pedagogy) support design learning?
3. How have everyday routines and material practices been impacted by the transition to distance design education?

In the following section, we begin by surveying the literature on the informal pedagogy of the design studio in proximate and distance settings. We then discuss the theoretical and methodological resources needed to study students' everyday studio routines and material practices before sharing findings.

Context

Informal Pedagogy

Although the informal pedagogy has received less attention than the formal pedagogy of the studio, there have been some studies conducted in both proximate and distance settings. Gray's (2013) study of informal peer critique brings attention to the ways students talk with each other about their projects outside of formal interactions. For students, informal critiques are conversations about work in progress between peers in the studio or, for example, while

smoking a cigarette outside. These conversations provide ad-hoc opportunities for reflection-in-action – chances to talk through the design problems or make sense of what others had said about ongoing design work. In this way, informal critique offers a low-pressure environment to extend the formal critique and provides space to process, clarify, augment, challenge, and make sense of what has happened (Gray, 2013). Similarly, Arvola and Artman's (2008) study of peer interactions in a studio found students using each other in coordinated ways to get unstuck, get new perspectives and rehearse design decisions.

Shifting the emphasis – from individual to group – Ashton and Durling (2000) position the studio as a space where groups, rather than individuals, learn to design. They describe the primary function of the studio as a setting for students to establish if they are “doing the right thing”. The right thing is a set of norms – for example, what constitutes good design. However, the ‘right thing’ is not simply established through formal interaction with tutors but emerges from a broader social process where knowledge is fabricated through daily interactions between people and things (Burr, 1995). The ‘right thing’ is socially co-constructed between tutors, students, curricula, profession and ideas about the discipline.

Central to this co-construction is the role of social comparison. It is through social comparison that appropriate practices and values are disseminated (Festinger, 1954). Here, students learn to locate themselves within the group and gain insight into their abilities – relative to their peers. This can happen through observation with the physical studio offering opportunities to observe body language, work and actions (Ashton and Durling, 2000).

The importance of comparison is also evident in distance settings. Findings from a longitude study of design students in a Virtual Design Studio (VDS) (Jones, Lotz and Holden, 2020) also stress the importance of comparison and demonstrate a direct correlation between the frequency of viewing work and attainment. Although viewing has connotations of passivity, Jones, Lotz and Holden (2020) argue viewing can be understood differently. First as a form of legitimate peripheral participation involving listening and looking from the edges (Lave and Wenger 1991). Second as ‘lurking’ – being present online but not appearing to engage actively. They argue “informal activities benefit students and explicitly active forms of interaction are not the only means by which learning takes place.” (Jones, Lotz and Holden 2020, p.18)

Clearly then, in proximate and distance settings, informal pedagogy in concert with formal pedagogy has a significant role in supporting students to learn to design and become designers. Nelson and Stolerman (2012, p.224) describe this a design milieu: “The process of becoming a designer is not a solitary, individual undertaking. It always takes place within a design milieu.” Elsewhere this milieu has been termed a habitus Gray (2013), drawing on Bourdieu (1977), characterizes the studio as a complex social and cultural environment. Habitus describes the pervading feeling that emerges from a given studio and is the product of social relations, beliefs and norms. For Gray, it is students’ negotiation of formal and informal pedagogy that works to produce this habitus, which works to ‘produce’ design students.

Theoretical Approach

In our discussions so far, the design milieu of the studio has taken a social form. Yet, we wish to extend it beyond social interactions and argue that everyday routines and material practices

contribute to informal pedagogy. This allows the space to explore how the displacement of these material practices within distance design education settings can hinder informal pedagogy. To do this, we draw directly from the 'research programme' of Studio Studies (Wilkie and Farias, 2016). Studio Studies draws on the traditions of Laboratory Studies (Knorr-Cetina, 1995) and associated aspects of Science and Technology Studies (Latour, 1987). What is distinctive about these approaches is the foregrounding of material entities alongside social activity. So, while humans may use materials, materials may also 'use' humans (Sorenson, 2009). By paying attention to the materiality of learning, we see the studio as formed by a combination of things and actors that include "peoples, policies, tools, representations, learning environments and the rest — [and it is these that] make possible different teaching and learning practices". Mewburn (2012, p.72).

This approach requires us to consider the studio as a situated practice – a place where knowledge, material and practice come together (Wilkie and Farias, 2016). Crucially, such sites are approached "without assuming a priori distinction between supposedly creative acts and routine activity, or between creative actors as opposed to assistants, equipment and tools" (Wilkie and Farias, 2016, p.2). Therefore, what happens in the studio is a distributed activity, and our assumptions about what should be foregrounded – usually the conversations between tutors and students – should be challenged. This theoretical frame opens up space for us to consider formal and informal pedagogies and their interactions as social and material practices.

Method

Typically, researching design education as a situated practice suggests ethnography as a relevant methodology. However, with limited resources, we needed a different approach to encourage participants to recall and share their encounters with materials, people and space. We used ethnographic mapping (Nolte-Yupari, 2017), a process that deploys graphic elicitation and map-making. It involves using drawings (created by researchers or participants) and interviews to elicit participants' experiences and understanding (Copeland & Agosto, 2012). Graphic elicitation strives to produce a 'hinterland' between language and the graphical. This hinterland places the focus on the relations between the drawing/diagram and what is said. As Pink (2006) notes, this is not a purely visual process; the visual is interpreted within an interview context. Compared to traditional qualitative interview processes, graphic elicitation emphasises its utility with seeing the normal in new ways (Banks, 2001) and attending to the multiplicity of experiences not easily expressed in spoken or written language (Pink, 2006).

In the first part of this study, we explored the everyday routines of the proximate studio by asking participants to draw a map of the space and then to draw a series of lines to re-enact the movements they had made in the studio throughout the day, "gestural re-enactment of journeys actually made" (Ingold, 2007, p.84). In this way, ethnographic mapping was used to record and access the mundane encounters, moves, and activities of participants in the studio, but outside of formal teaching sessions. While they drew, we interviewed the participants and referred to the journeys re-enacted on their maps (see figures 2 & 3 for examples).

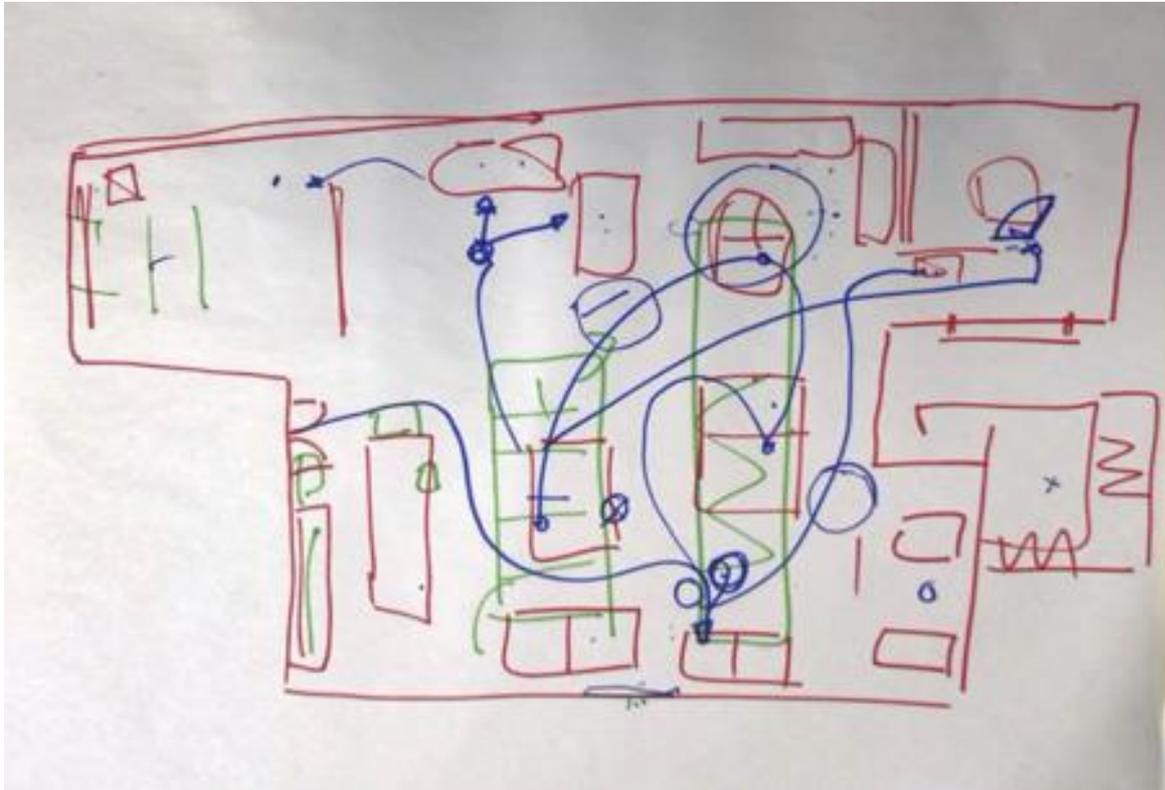


Figure 2. Participants' map of the studio, and journeys made (pre-pandemic).

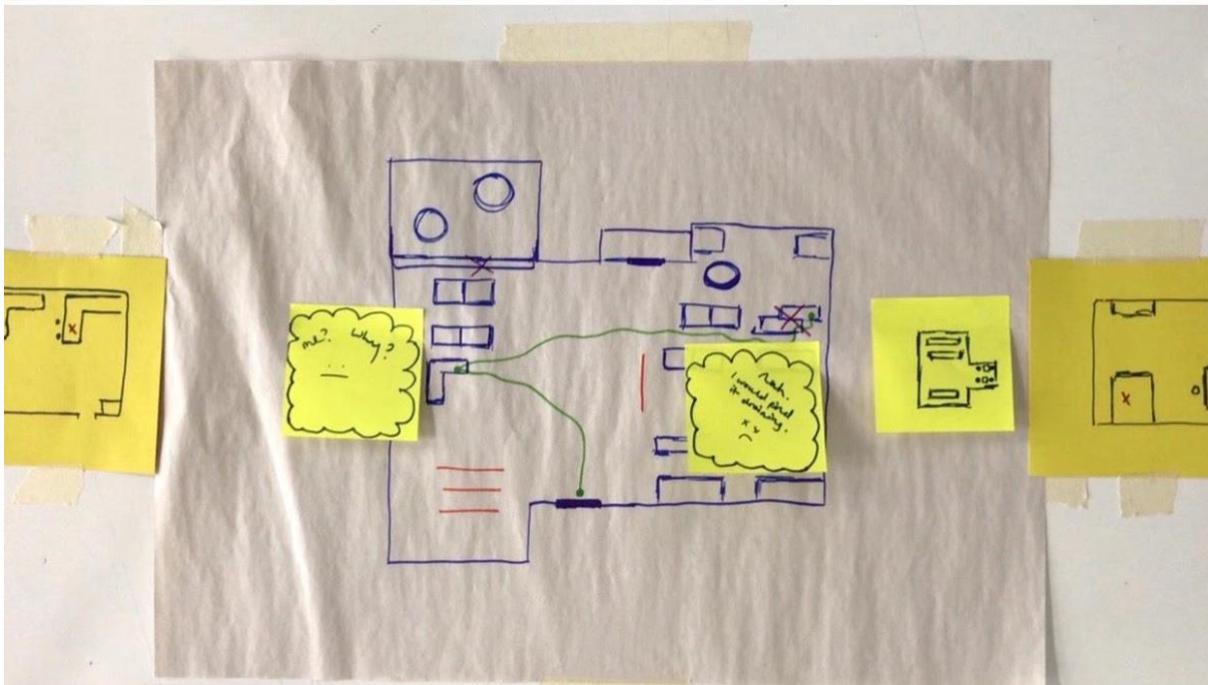


Figure 3. Participants' map of the studio, including post-its to indicate additional spaces used and journeys made (pre-pandemic).

We augmented our initial data (pre-pandemic) with students' accounts of distance design education (during the pandemic). To achieve this, we returned to the emerging themes and

held two focus groups, each with three students, to generate accounts of distance learning experiences. We conducted focus groups to gather collective views (Denscombe, 2007) on how participants experienced distanced design education. Students were asked to map their settings during these focus groups, which in most cases was a bedroom or kitchen either at home or in student accommodation (see figures 4 & 5 for examples).

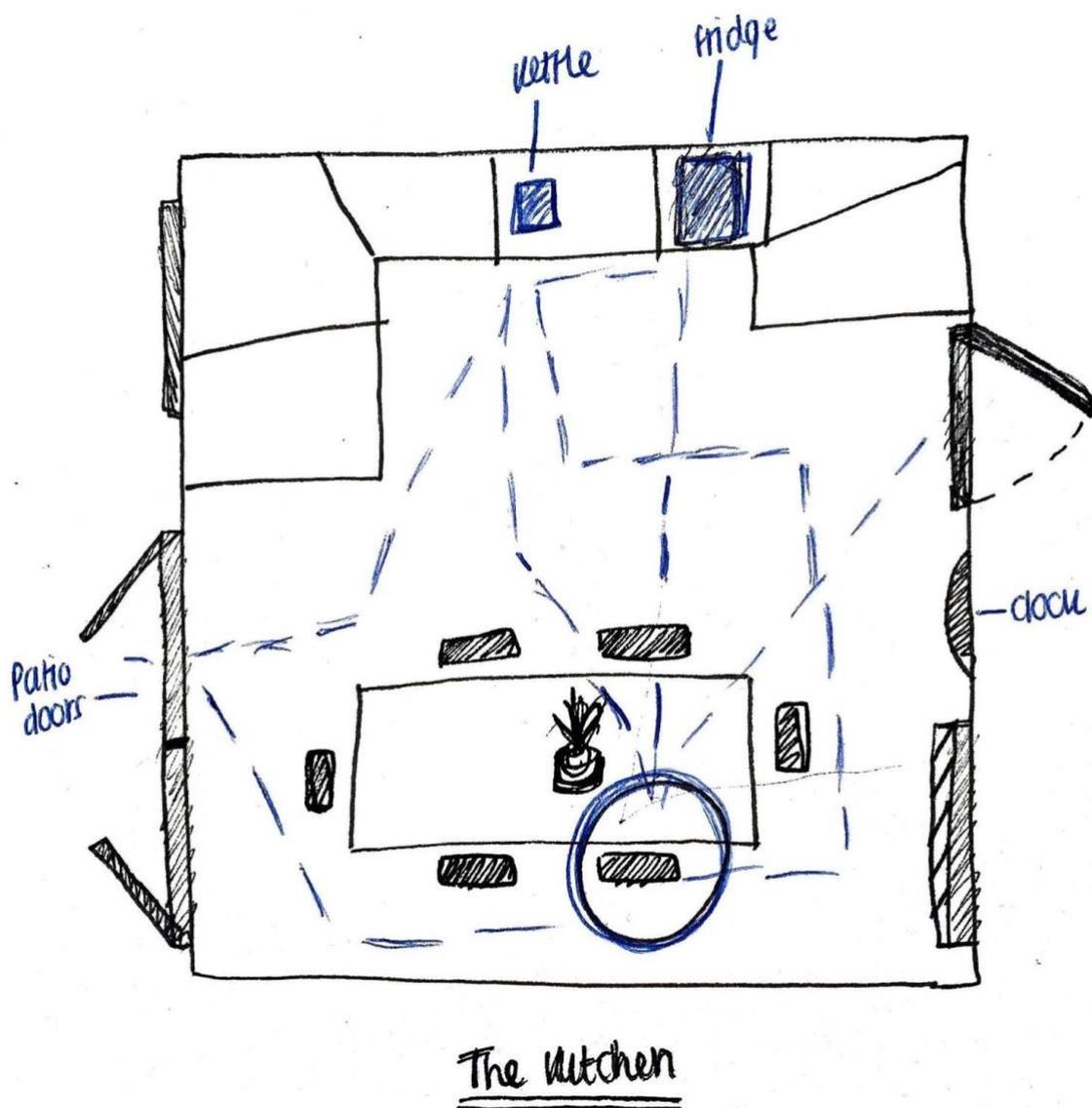


Figure 4. Participants' map of the home/work space (during pandemic).

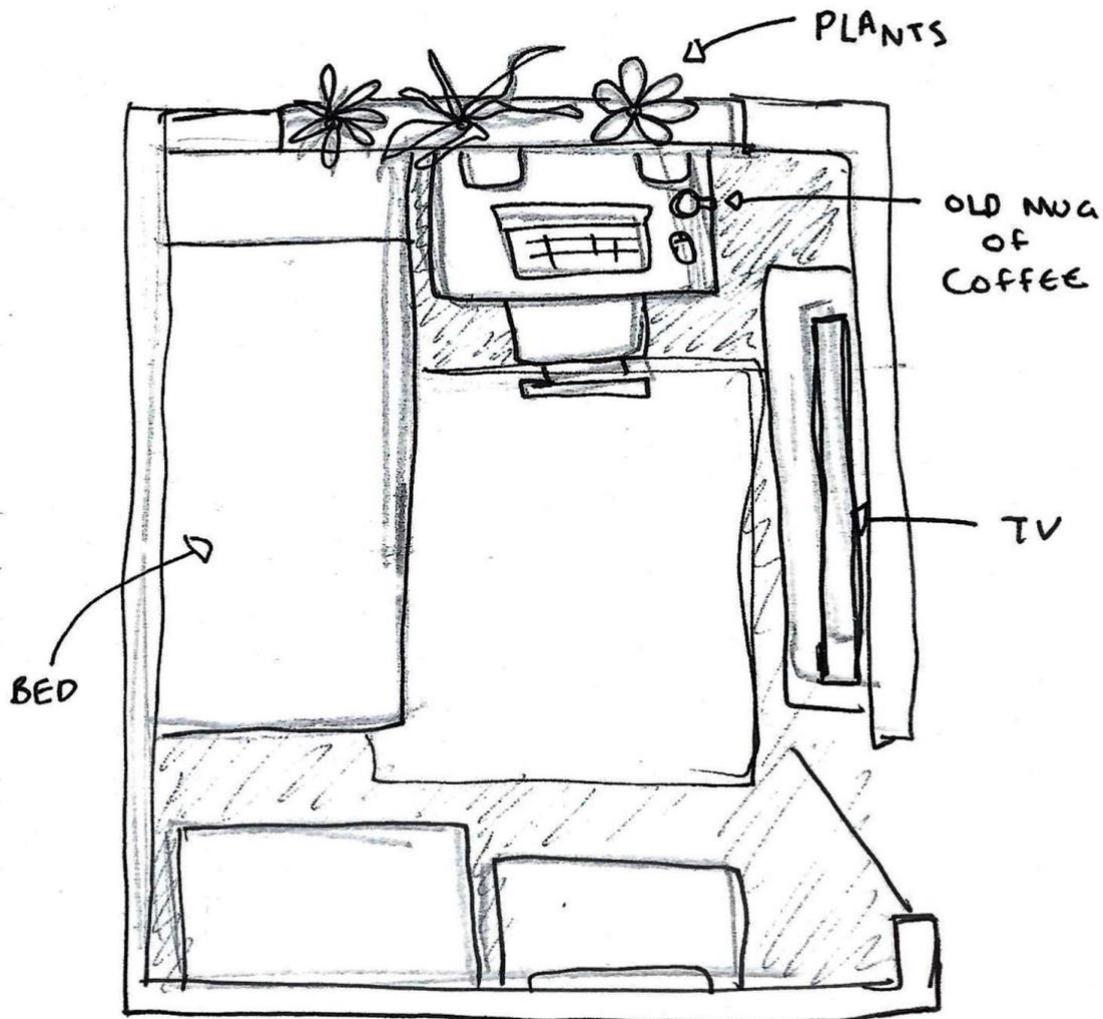


Figure 5. Participants' map of the home/work space (during pandemic).

Analysis

The site for this study is an undergraduate graphic design course in a university in the North of England. The first data set explored everyday routines in a proximate studio setting during the academic year 2019/20 (pre-pandemic) and involved seven final year participants (five females and two males). The second data set explored everyday routines in distance settings in small focus groups and composed six final year participants (four females and two males) and was undertaken in the academic year 2020/21. The second data-set drew from a different cohort of final year students who had experienced just over half their 3-year degree in a proximate studio setting, and the remainder exclusively at a distance.

In the first part of this study, we recruited participants through an advert; this attracted four regular studio users. Therefore, to ensure we could represent students who worked elsewhere, we purposively selected (Teddlie and Yu, 2007) a further three students that either used the studio infrequently or, in one case, seldom.

After conducting the interviews and generating the ethnographic maps of students' experiences, the audio, films of the drawing and the drawings themselves were put into Atlas.Ti to begin the coding process. In the first instance, we undertook a thematic analysis (Charmaz, 2014) and developed emergent coding to familiarise ourselves with the data. After extracting codes from the data, we began to make sense of these emerging quotes by comparing, checking, collapsing themes and building networks of insights.

Analysis of the focus groups became a valuable lens to read the initial data generated in proximate settings. Returning to our initial findings twelve months into lockdown, we examined and compared themes within the two data sets. The disruption wrought by the pandemic and the closure of the physical studios provided significant and productive rupture for us as researchers. It enabled us to explore and reflect on the proximate studio with a new sense of unfamiliarity.

By analysing the interview data and ethnographic maps, we developed accounts of everyday studio activities and encounters. We understood these to be accounts of the informal pedagogy that operated between the formal pedagogy of scheduled interactions. Emerging themes from these accounts were then used as sensitising concepts to understand participants' experiences of distance settings.

Results

Through thematic analysis, we came to see informal pedagogy as fulfilling five core functions, and we have called them:

The Social Studio

The Comparative Studio

The Organisational Studio

The Processual Studio

The Performative Studio

This section outlines how these functions work, within both proximate and distance settings, by drawing upon examples from the two data sets.

The Social Studio. The Social function of the studio encapsulates the interactions that happen outside of working habits. The social studio acts as a catalyst for friendships and collaboration; it describes comfort and familiarity with the space.

The Comparative Studio. The comparative function of the studio is used by students to benchmark themselves against their peers and observe each other's workings.

The Organisational Studio. The organisational function of the studio describes the way students use the space to manage projects, keep on track, and use the studio (to not be at home) to do work.

The Processual Studio. The processual function of the studio begins to unpack the different areas and places that students use to undertake various parts of the design process; this may be other places in the studio or outside of it entirely.

The Performative Studio. The performative function of the studio discusses how the studio contributed to the student's designerly identity.

The Social Studio

Proximate

The Social function of the studio encapsulates the interactions that happen outside of working habits. It is maintained through explicit and implicit tools, resources, and strategies adopted by those who inhabit the space to build and maintain the social. Compared to accounts of infrequent studio users, it became apparent that the social does more than allow the space for fun. It begins to construct levels of ownership. One of the more infrequent studio users described how they were offered a cup of tea when they came to the studio. Suggesting that they were a guest in the space and how only through regular use of the space would one feel comfortable enough to make themselves at home, to make themselves a drink. This homemaking and comfort we found were only accessible to those who spent extended amounts of time in the studio:

"I feel more involved in the space, I've had more input into this space so I feel more comfortable in it." (P2)

Comfort and involvement in the social doesn't evolve by chance (Wragg, 2020) but requires a level of responsibility and ownership for the space. Our data revealed that the students who spent more time in the space felt a level of commitment towards maintaining it. These students would often adopt a custodian mentality; they would move things, add things and maintain the upkeep of the space:

"There's a money jar for tea and coffee. So whenever I make a brew I think have I got any change and I'll put it in. The people that do that are the ones always up making tea and always chatting and they feel more comfortable in the space." (P2)

However, the physical studio can also bring forced sociality. The space itself is designed to make work visible, make students visible and make tutors visible. Being on display is not a mode of working that all students feel comfortable with and one of the contributing factors in why they would choose to work elsewhere. To manage the forced sociality of the space, accounts from less frequent users suggested that they would consider where they positioned themselves in the room to handle the social. Some described moving towards the edges of the room or facing a wall to avoid being on display:

"I found it quite intimidating, the way it's laid out means you have to sit with people. It can be intimidating to just walk in." (P5)

Distance

We can contrast this with accounts of learning at a distance. Without the physical studio to accommodate collective studio hours, we began to see the decline of the social and how comfortable students felt with one another. Our focus group data revealed that without the constant sociality of the physical studio, the social moments dissolved to no more than a few minutes at the start of a zoom call:

"Back in second year, I once wore a football shirt. It created banter with tutors about football teams...that wouldn't really ever happen online." (FG1)

Further accounts outlined the decline of the social and the informal studio. Reflections on how the tone of the experience has now become more serious. The online experience doesn't allow for humour, which often acts as a catalyst for friendships and collaborative working relationships. The lack of the social became a barrier for students in feeling comfortable joining virtual events, the absence of familiarity with their peers and their tutors adding a further layer of uncertainty.

The Comparative Studio

Proximate

The comparative studio is used by students to benchmark themselves against their peers and observe each other's workings. This function emerged from themes of proximity to feedback and 'unstucking'; we began to recognise that students working together in the space would deliberately use that proximity to ask if they were doing the right thing (Ashton and Durling, 2000). Our data revealed that close contact with peer groups encouraged frequent low-risk conversations that helped the progress of students projects in ways that were not accessible to those who worked elsewhere:

"...I'm missing out on being able to approach other students and see what they're doing. I often find myself asking am I doing the right thing, am I doing the right thing, I don't know if I'm doing the right thing. That's kind of what we do (as design students), we look at someone else's work and get clarification in two minutes about something I'm worrying about for days". (P7)

As well as low risk exchanging of ideas with peers, students used the space to observe from afar what others were working, the looking over someone's shoulder to compare, the observing of what programmes and sites peers are using etc. Whilst comparison is a way for students to benchmark themselves, we found that it also became a function that discouraged certain students from feeling comfortable working in different ways to their peers. Our data contained accounts that suggested there was a level of censorship present in the studio with deliberate actions taken by students to appear a certain way when being observed by their peers:

"When I'm in here I won't go on some sites because I think it could look embarrassing. Because everyone in here is like really cool and professional." (P5)

Distance

The comparative studio function became less visible online; student's had fewer opportunities to observe each other's workings outside formal project shares. However, we found the loss of the 'requirement to be seen' for some became a positive online experience. The absence of the studio liberating them from the tropes of what it means to look and behave like a graphic designer:

"I'm not comparing myself to other people anymore because I'm not seeing what other people are doing. Before I could gauge if I was on track by looking across the room.

(Distance) has given me more confidence, it has made me move away from graphic design, I'm on the edge of the discipline now. Not comparing myself means I don't have that pressure to conform and be a graphic design student making the same work as everyone else." (FG2)

Although the shift away from comparison was in some cases liberating, we also found it left little room for low-risk conversations that our initial data proved so crucial in a student's design process. Accounts from online experiences began to outline the student's frustration with not having other graphic designers to test ideas and measure progress. We argue the proximity of like-minded peers is vital for students to practice their design vocabulary. Without the affordance of movement around the space amongst other people, some students began to feel the influences around them were narrowing:

"I think it becomes more singular and focused (online) we still have crits and project shares but I think (at a distance) I get sucked into a sphere of what I think is cool and I think without having people in person looking over your shoulder or you to look over their shoulder...I feel like I haven't soaked in as much influences as I would have done before (physical studio)". (FG1)

The Organisational Studio

Proximate

The organisational function of the studio describes the way students use the space to manage projects, keep on track, and use the studio (to not be at home) to do work. The students who were frequent users of the studio suggested that by coming in, they were able to separate home life and academic life, most deliberately spending extended hours in the studio to not take their work home with them:

"...I never do work at home and that's not because I'm lazy. I refuse to spend my evenings doing work at home. For me home is my space." (P2)

The studio becomes a site that allows for separation, a space that can be used to organise how a student manages their time and their design process. Clocking in to the studio, or as student accounts describe it, "treating it as a job" (P3) outlines how the physical studio encourages focused efforts away from other distractions.

Distance

Without the physical studio as a site to manage their time and their projects, focus group data revealed that students were now finding it harder to manage productivity levels in efficient ways. Our first data set showed the organisational function acted as a tool for students to separate spaces. For example, they would use the studio to not be at home to do work. This foregrounded the importance of other spaces in relation to the studio and how separation becomes an integral part of getting things done. With all workings now condensed to the home, our data suggested that organising projects and time became harder to manage:

"It's so much harder to work at home, you're working at home in the same four walls. It's really hard to distinguish what's working time and what's relaxing." (FG1)

The Processual Studio

Proximate

The processual studio refers to the different areas and places that students use to undertake various parts of the design process; this may be different in the studio or outside entirely. Analysis suggests the studio is a permeable site in which they can come and go. For most, the making happens in the studio with other tasks such as writing and research usually happening elsewhere (at home or in the library); the studio acts as a space for students to work on the things they wouldn't be able to do at home. For some, the studio serves as a basecamp, a place where they bring and leave things, a place where they will set up camp to only travel elsewhere for brief periods:

"I'll go to the library, get the books, come here, read the books, I don't read the books in the library, I don't read the books at home, I always do it here (studio)...all that happens in this space." (P2)

The studio itself provides various areas that afford different working methods that students are aware of and can use to aid other moments in their design process and daily routines. Students are conscious of where they position themselves in the studio to achieve certain things. To stand near the kitchen is to be open to social distractions. To sit on the sofa is to require feedback from a tutor. To face a wall is to be undisturbed. There is a constant negotiation with space and what they want out of it:

"I'll come in and go here (kitchen) to make a brew...It helps me get my head in a space where I know what I'm going to do that day. Whilst I wait for the kettle, I'll plan what I'm going to do that day." (P2)

Distance

The processual ability to come and go and travel around and through the studio to undertake different parts of the design process became less of a reality online. Students were previously aware of where to position themselves in the studio to achieve certain things, manage materials, or position themselves for social interactions strategically. The processual ability to use space to engage with the different stages of the design process were now confined to specific locations within the student's home. The focus group participants found it hard to articulate other models of operating because, for them, multiple locations were not a reality (see Figure 6).

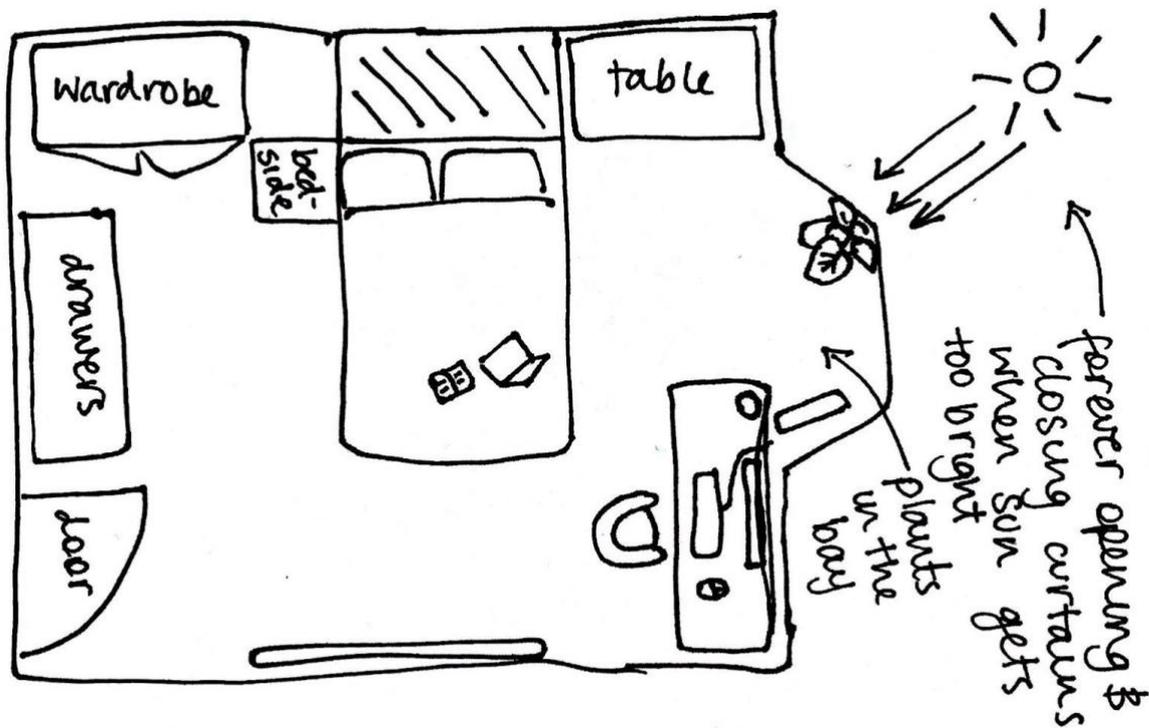


Figure 6. Participants' map of the home/work space (during pandemic).

The Performative Studio

Proximate

The performative studio emerged from reflections on how the space contributed to the student's designerly identity. It afforded opportunities for low-risk conversations to test their 'designerly talk' (Gray and Howard, 2014) and practice how to behave like a graphic design professional. The analysis also uncovered some implicit quid pro quo moments; the act of appearing engaged to those with perceived power was identified as a way to lead to other opportunities:

"I think it does open more doors for you (being in), I don't think tutors mean for that to happen but I think if you're in and you're engaged it does open more doors for you". (P2)

The studio revealed itself as a site for broadcasting progress with the acknowledgement that, to some extent, actions are being observed by peers and tutors. This begins to present the studio as a stage for students to behave like professionals; one student describes the expectation of engaging in the space to be "wandering around appearing studious for at least one or two hours" (P6). These modes of performative operating suggest that actions in the studio may not be quite as spontaneous as assumed, but rather, at some moments, calculated to appear professionally competent.

Distance

The studio as a performative site was reduced dramatically in distance settings. Accounts from the first set of data that spoke of engagement with extra-curricular opportunities were not

articulated in accounts of online learning. Students also outlined that without the reminder of the studio, they struggled to formulate designerly identities at a distance:

“The studio for me is a very artsy space. I don’t know how to describe it but do you know when you’re sat in a studio environment, you’re surrounded by people’s work and even if it’s not for inspiration it reminds you that you’re an art and design student.” (FG1)

Discussion

By focusing on students' everyday routines and material practices, we have emphasised the importance of informal pedagogy and highlighted five enabling functions of the studio. These functions were impacted in distance settings. We were also curious to explore how formal and informal pedagogy intersects. Returning to Shaffer's (2007) diagram of the cycles of production and reflection (figure 1) – that effectively captures formal studio pedagogy, we can now extend it (Figure 7) to include informal pedagogy.

Figure 7 shows informal pedagogy undergirding formal pedagogy and supporting the development of creative work and designerly identities. The zones of formal and informal pedagogy are presented as a continuum.

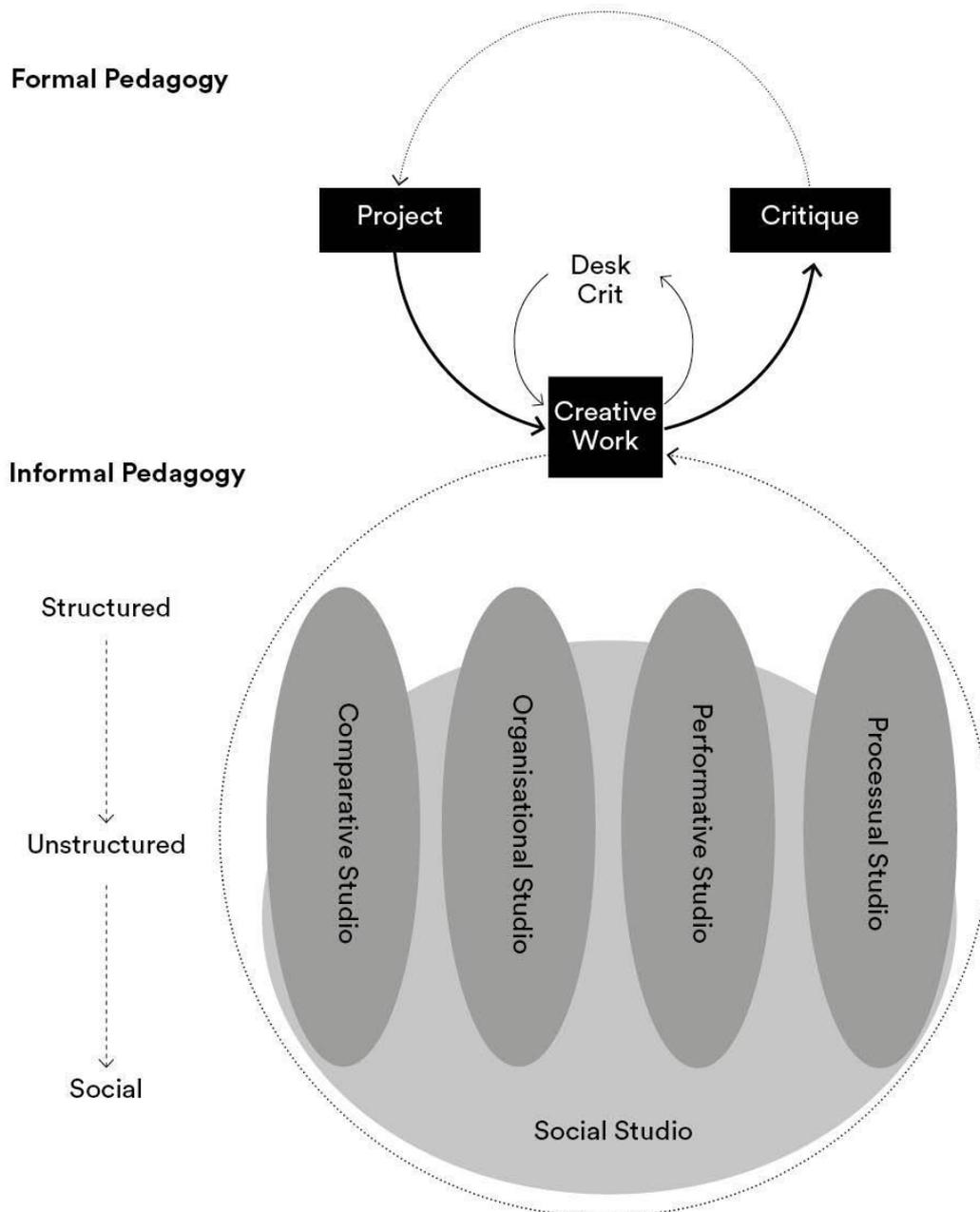


Figure 7. Diagram of the interaction of Formal and Informal Studio Pedagogy.

Formal pedagogy is where traditional instruction happens – desk crit, project share, critique, workshop, lecture. *Structured Informal Pedagogy* is where careful consideration of the informal occurs. We have taken this term from Lim, O’Halloran & Podlasov (2012), who use it to articulate how teachers construct less hierarchical learning environments. Here we extend this idea to include the deliberate design of learning environments that can foster the five functions described above. This can take a material form – the use of soft furniture – but it is also how tutors and students enact this – a sofa can be a formal site of interaction if used in specific ways.

Unstructured Informal Pedagogy happens by chance and cannot be orchestrated; we see this happening as students move around the space casually, talking to each other about the things they are working on. *The Social studio* is where the studio becomes a site for building friendships, having tea and a chat whilst Christmas decorating etc.

There are interdependencies between these zones – for example, creating opportunities for structured informal pedagogy may increase the chances for social interaction and vice versa. The social lubricates the comparative, organisational, processual and performative functions. In pre-pandemic proximate studio accounts, the social was deeply meshed with material and spatial practices of the studio – making tea, wandering around. The move to distance education precipitated a decline in social interactions that the introduction of group social media platforms couldn't compensate for.

Ashton and Durling's (2000) study of a proximate setting showed that socially isolated students (even if they used the studio) were less able to access comparative opportunities rendering them "powerless to direct their own development" (2000, p. 9). In contrast, the VDS studied by Jones, Lotz and Holden (2020) enables students to view work without social interaction and, therefore, may not limit those socially isolated students from the learning that can arise in informal pedagogy. Clearly then, informal pedagogy (in proximate and distance settings) needs to consider which students the informal is afforded to.

In this study, students' everyday routines and material practices were significantly impacted by distance design education – while noting this is based on accounts of a particular distance context – the results suggest the absence of the physical studio interrupted the five functions. With most online interactions mediated by tutors, formality became the core studio experience. The informal and often implicit modes of operating that the physical studio allowed for disappeared: looking over someone's shoulder, benchmarking from afar, the quick chat whilst the kettle boiled. It left only the formal pedagogy behind: desk crit, critique, workshop.

The loss of opportunities for comparison had varying consequences in distance settings: a narrowing for some and liberation for others. The conflation of home and study (wrought by the pandemic) led some students to actively adapting their environments by creating 'artful surfaces' (Vyas & Nijholt, 2012). Despite this, however, a pervading sense that students' designerly identities were less sure and less formed remained. Suggesting these designerly identities are formed partially in the presence of others and require material and spatial conditions.

This leads us to formulate the idea of the proximate studio as a 'regulated freedom'. It is simultaneously regulated by powerful norms and expectations while constituted of openness and a sense of possibility inherent in creative practice. In contrast, distance education in this context offers 'unregulated freedom' – a loosening of some norms and expectations alongside openness of creative practice. Paradoxically, the distance setting worked to narrow the approaches for students who feed off seeing their peers at work. Yet, for others, it liberated them from the tropes of what it means to look and behave like a graphic designer and challenge the representation of the studio. This is powerfully articulated by one respondent, a student of colour and significantly in the minority, who discussed finding new and more

representative communities online. Crucially the power 'exerted' by the studio and those that came into it were reduced at a distance.

Conclusion

Shifting our attention from the interactions (between students and tutors) towards students' everyday studio routines moved our focus from *formal pedagogy* to *informal pedagogy*. In the process, we rendered different facets of studio education visible.

First, it substantiates informal pedagogy as a critical component of learning design (Gray, 2013; Ashton & Durling, 2000; Jones et al. 2020). In particular, we argue the informal undergirds formal pedagogy through five functions: social, comparative, organisational, processual, and performative. By identifying and naming these functions, we, as educators, might better articulate what the studio does outside of formal interactions.

Second, these results illustrate how much design education happens outside of the formal pedagogy of the studio. Suggesting, along with Jones (2021), that the visible practices of the studio, although well documented, are only part of how studio education happens.

Third, we propose the studio is a place of intersection between formal and informal pedagogy. A space that extends and undergirds formal interactions. Where material, spatial and temporal qualities – open spaces, open hours, open timetable – enable a range of functions that serve the process of learning to design.

Fourth, distance settings hindered these functions because, in the context of this study, the infrastructure of the physical studio that enables informality was missing. We should prioritise designing the infrastructure for informal pedagogy to thrive in hybrid and distance settings.

Although distance settings hindered the five functions of the studio, we also found it ruptured some of the patterns of the proximate studio in productive ways. It suggested cautious attention needs to be paid to the design milieu and how this powerful co-construction of knowledge and becoming – both regulates freedom in ways that are productive for some but delimiting for others.

Finally, we urge that considering degrees of informality may also help educators actively set conditions to support and enable the identified functions.

Further Research

Access to informal pedagogy is also unlikely to be evenly distributed, particularly for those isolated from peer groups. So, while it might be a space from which students challenge the positions of the formal pedagogy, potentially in less hierarchical ways, further research would be helpful.

An element that is not currently clear in this study is the role of tutors. While we suggest much informal pedagogy can be deliberately structured – or at least the conditions and infrastructure can be designed to encourage it – we are unclear whether these conditions can be enabled or discouraged with tutors in proximity. Indeed, at a distance, very few spontaneous spaces

appeared to replace the informal pedagogy of the studio, suggesting that structured informal pedagogy in tandem with encouraging social integration may be needed.

Finally, we ask to what extent is informal pedagogy an integral part of learning in other disciplines? Further research that asks how informal pedagogy could be accessed and practiced across broader domains would be helpful.

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