#OurPlace2020: Blurring Boundaries of Learning Spaces

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Abstract

The move to online learning has blurred the distinction between the Foucauldian conceptualisation of university as a ‘Heterotopia’ with the real world of contingent alternative learning spaces students create. In this paper, we highlight the need for a broader and more holistic approach to educational design which requires a re-conceptualisation of the learning environment to include the students’ real-world spaces and their socio-cultural surroundings through a postdigital paradigm. We seek to understand how Covid-19 has accelerated postdigital disruption of the concept of university as heterotopia, where learning is traditionally highly structured and segmented in slices of time for seminars, lectures, and workshops. In April 2020, the University of Sydney Business School invited students to share stories of their remote learning experience using the #OurPlace2020 hashtag. Using Actor Network Theory (ANT), we analyse 37 digital stories to provide examples of how the boundaries of the traditional learning spaces of university campus are blurred with real-life learning spaces when students are studying remotely. We argue for the need to adopt a broader analytical approach that can elucidate the complexity of heterogeneous networks of interacting digital and non-digital entities through which learning spaces are constructed.

Keywords Heterotopia · University · Learning spaces · Postdigital · Online learning · Actor network theory

Introduction

The Covid-19 pandemic has broken down many of the established social structures of modern higher education. The rapid transition to online teaching and assessment and the fracturing of the campus as a space for learning disrupted the rites of passage undertaken by students, making their journey through university rent with uncertainty, ambiguity, messiness, and a sense of discomfort. Moving from school

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to university or from undergraduate to postgraduate study became a liminal journey shared through social isolation, asynchronous interaction, and a fear that this way of learning would become the new normal. University students have gone from having structure within their social and educative societies to being part of anti-structures, where the inversion of rituals (teaching and learning practices, pedagogies etc) define their experience as students.

National lockdowns and other public health measures during the Covid-19 pandemic forced universities to move the entire learning experience off campus and into temporary structures of web-conferenced classrooms, online assessment and learning spaces created from bedrooms, dining tables or other personal spaces (Murray et al. 2020). How students constructed their identities through higher education became more complex as they searched to find pragmatic ways of being, belonging and becoming part of a community, sharing the intimacy of their home spaces and their lives outside university (Meehan and Howells 2018). The students' learning spaces became blurred, where the personal, professional and academic intersected through social communication (Chugh and Ruhi 2018), participatory creativity (Burgess et al. 2006) and socially mediated 'publicness' (Baym and Boyd 2012). These spaces also engendered social barriers between students themselves and between students and staff. This dissonance is manifest in debates around the declining use of cameras in class (Castelli and Sarvary 2021), the controversies over the use of proctoring software (Selwyn et al. 2021), decreasing student attendance (Spathis and Dey 2020) and an increase in mental health issues exacerbated by the feelings of being isolated from peers and their community (Hamza et al. 2020).

In this paper, our aim is to explore the complex and dynamic interplay of learning, space and the heterotopic university and draw implications for future educational design directions. Students learn and make sense of their learning tasks within complex learning environments comprising of networks of tools, artefacts, practices, places, interpersonal relationships and ways of knowing (Goodyear and Carvalho 2019). We want to problematise this space by suggesting that the current pivot to online learning has blurred the distinction between the Foucauldian conceptualisation of university as a 'Heterotopia' with the real world. We argue that this juxtaposition of the real and heterotopic spaces necessitates the broadening of the investigative lens to include the students' real-world spaces and actions when designing for learning in a postdigital world. What can we learn from the contingent alternative learning spaces students created in response to the unexpected shift to remote learning? Without the usual physical and temporal structures imposed on learning by universities, students had to adapt both their learning and personal spaces, enacting their own educational practices within their sociomaterial context (Gourlay and Oliver 2016). How can educational designers support students' learning in a postdigital world where the boundaries between 'Heterotopia' and real world are blurred? For us, the postdigital is a paradigm through which we analyse learning spaces. It is a tool to think with rather than to think about.

In April 2020, the University of Sydney Business School invited students to share stories of their remote learning experience via multiple social media channels. #OurPlace2020 was designed to connect students to each other, to build community support and a sense of belonging in lockdown. Approval was granted by the University

of Sydney's Human Research Ethics Committee to use the data from 37 student posts for research purposes. Using Actor Network Theory (ANT), we analyse all 37 digital stories created by students for #OurPlace2020 through the Foucauldian lens of 'Heterotopia', which 'juxtaposes, in a real place, several spaces that would normally be incompatible' (Vidler et al. 2014: 21). While all stories contributed to our conceptualisation of postdigital spaces, images that best exemplify our discussion were chosen for the paper. In #OurPlace2020 posts, students demonstrate both the intrusion and erosion of the heterotopian university in their personal real-world spaces. Through a postdigital paradigm, we seek to understand how Covid-19 has accelerated disruption of the concept of university as heterotopia, where learning is traditionally highly structured and segmented in slices of time for seminars, lectures and workshops (Hope 2016).

Study Context

The University of Sydney Business School (USBS) is a faculty of the University of Sydney, Australia. It delivers programs for nearly 16,500 domestic and international students across a variety of commerce disciplines and degrees. In the pre-Covid configuration, students were distributed across a large and sprawling campus, in fractured groups and classes that did not afford many opportunities to connect and build strong links within a cohort. At the start of 2020, as students at the Business School moved to online study, many of them still in their home cities, the School designed a project (called #OurPlace2020) to help students support their transition to a very different style of learning and assessment. We wanted to create pathways to facilitate engagement, active learning and collaboration, both as part of the curriculum and embedded in the wider university experience. Delivered through a program of synchronous and asynchronous activities, resources and interactive media, the project built on the experiential and transitory stories of students to help define what it meant to be a part of the University of Sydney Business School community. We invited all Business School students to submit short social media artefacts or stories of their experiences studying online. Participation was encouraged by a gamified competition with prizes awarded for the best entries.

The aim of the project was to encourage students to share where they were studying, what motivated or scared them about online study and how they would encourage their peers to find their way through a disrupted and uncertain journey through liminality. Wayfinding for students was a central tenet of the project, especially with the disrupted transitions between social structures, the challenged expectations and the complex employment environment experienced by our cohorts. Wayfinding can be located within the conversations, reflections, casual and fleeting connections of students, both inside and outside the classroom (Alterio and McDrury 2003). In these spaces, students choose to leverage the opportunity to make and share their identity and their stories (Clark and Rossiter 2008). The use of technology and social media is a critical lens for how students make and leverage this interconnectedness, creating personal ecosystems of engagement and exposing intersections between learning and the acquisition and challenging of expertise, authority, informality, expediency,

certainty, immediacy and representation (Ellis and Goodyear 2016; Greenhow and Lewin 2016). Through the actions of making and sharing stories, #OurPlace2020 shaped the environment in which our students could find certainty and escape the bounds of liminality. It encouraged them to build a collectively shared community of experiences, stories and memories.

#OurPlace2020 in a Postdigital World

A postdigital perspective can help us understand learning as an ever evolving but embodied, social and material experience wherever students may be studying (Fawns et al. 2019), and one in which students network across physical and virtual contexts (de Laat and Dohn 2019). Our conceptualisation of postdigital rejects dichotomies of the ‘digital or material, virtual or real, online or face-to-face, artificial or natural, technical or human’ (Networked Learning Editorial Collective 2020: 318). In some software the term ‘postdigital’ auto-corrects to ‘postnatal’, and ironically, this also applies to educational digital practice. The birth of digital information technology decades ago has profoundly and irrevocably disrupted education (Cramer 2015: 220). Learning with and through digital tools is no longer nascent: digital is inextricable from educational design and experiences, wherever learning takes place (Carvalho et al. 2016; Jandrić et al. 2018). Digital technology has become, as Negroponte (1998) famously predicted, as ever-present in our lives as air or water, and are so deeply entangled in our personal, social and educational practices that they are left unexamined. Hence, Selwyn and Jandrić (2020) argue for critical attention to context when considering digital practice in education, particularly to the messy world of power and privilege, where digital divides among students are not mentioned in glossy EdTech brochures. In #ourplace2020, postdigital practice prompted by a pandemic exposed how student learning occurs outside of traditional university heterotopic spaces. Its inherent disruption provokes a reimagining of pedagogical space and an educational redesign (Peters et al. 2020).

University as a Heterotopic Space and the Blurring of the Boundaries with the Real World

In ‘Of Other Spaces’, Foucault writes that we are living in an age where our experience of the world is that of a ‘network that connects points and intersects with its own skein’ (Foucault 1986). Space in this world is defined by the forms of relations of proximity between points or elements. This space is heterogenous and delineated by a set of relationships between sites which give them characteristics that are irreducible to one another. These sites can be described by analysing the network of relationships within them. Of such spaces, Foucault describes three: the real-world spaces, utopias and heterotopias. Utopias are sites with no real place while heterotopias are places that do exist but are counter-sites of the real places. Heterotopias simultaneously represent, contest and invert real space, and in the process create transitional spaces. Foucault (1986) classifies six principles for heterotopia, that all

cultures have heterotopic spaces; however, they vary in forms; the function of heterotopia can change within a society; it juxtaposes in a single real place several incompatible spaces; it is linked to slices in time and can only function if those within it arrive at an absolute break with their traditional time; it operates under a system of opening and closing which controls access to it; and it has a function that is either illusionary or perfect in relation to all other spaces.

It was Foucault's 'Rituals of Exclusion' (1996) that triggered our thinking about student agency, power and identity in a postdigital space. In this interview, Foucault conceptualises higher education as a complex system with a dual function of exclusion and integration. This concept is further explored by Haghighi (2020) who conceptualises university as a transitional heterotopic space where young men and women are transformed into an employable workforce. We are more interested in the heterotopic characteristics of university spaces and how they traverse the real-world postdigital spaces of the students. While on campus, students are disconnected from the real world by the basic structural aspects of the university which appear normal such as the hierarchic student-professor relationship, academic exercises requiring students to engage in often fictitious activities and analyses of case studies, and an examination system that strictly discriminates between students of certain qualities, abilities and characteristics. It is what Foucault describes as artificial and quasi-theatrical social mechanisms through which 'the student is given a gamelike way of life; he is offered a kind of distraction, amusement, freedom which, again, has nothing to do with real life; it is this kind of artificial, theatrical society, a society of cardboard, that is being built around him' (Foucault 1996: 65). Following this period of exclusion in an artificial space the student is integrated or reabsorbed back into the society where they are expected to display the socially and politically accepted behaviour and norms (Foucault 1996).

The blurring of the boundaries between the heterotopic spaces of the university and the real-world spaces of the students begins however when the student is studying remotely. In this paper, we highlight the need for a broader approach to educational design which requires a re-conceptualisation of the learning environment to include the students real-world postdigital spaces and their socio-cultural environments. This would require a more holistic approach and a need for what Goodyear and Carvalho (2019) describe as 'the communicative (or "invitational") rather than controlling side of design' (51). In this approach, educational design takes into consideration the complex heterogenous networks of interacting digital and non-digital entities through which learning spaces are constructed. It takes into account a complex array of influences including human, physical and digital. It values learning through authentic engagement in practice and considers competence as the ability to hold together the entities needed for the task at hand. And finally, it allows for student reflexivity and understands that learning involves students co-configuring their learning environments, but they need practice and guidance to do so (Goodyear and Carvalho 2019). In essence, students are learning in complex environments where the boundaries between the heterotopic spaces of the university and the real world are blurred and where heterogenous networks of people, physical and digital entities, activities and postdigital practices of students necessitate a new and more holistic approach to educational design. Up to this point, we presented out conceptualisation

of how #OurPlace2020 fits within a world where the boundaries of the heterotopic university spaces are blurred with real-world spaces and how this necessitates a broader and more holistic approach to design for learning. Next, we suggest Actor Network Theory (ANT) as an analytical and investigative approach to exploring this entanglement of heterogenous entities.

#OurPlace2020 Through the Lens of Actor Network Theory

Actor Network Theory (ANT) is an approach to Social Theory. In the 1980s, it instigated a move toward redefining the role of the material and its relation to the social in Science and Technology studies (Callon and Latour 1981; Latour 2005). ANT rejects the human and material divide and defines action as unfolding through heterogenous networks of various configurations. In this perspective, all human and non-human elements exist in a network of constantly shifting relationship. While ANT adheres to a non-dualistic perspective, we would add caution to assuming strict symmetry between humans and things in all matters because ‘human learning is qualitatively different from the ways in which things adapt to people’ (Goodyear et al. 2016: 102).

The emergence of ANT in the study of education is relatively recent and focused on its contribution as an analytical method, including the complex and messy ambivalence of education. We are proposing ANT as an analytical approach for exploring the postdigital spaces of higher education because it fits with our holistic approach to educational design and agrees with our preferred definition of learning or competence described above. Learning in ANT is not defined as changes in consciousness but as emergent ‘through the effects of relational interactions, in various kinds of networks that are entangled with one another, that may be messy and incoherent, and that are spread across time and space’ (Fenwick and Edwards 2010: 22). Knowledge in this sense is embodied in a variety of material forms and enacted through heterogenous networks in which bits and pieces from the social, the technical and the conceptual are fitted together to form relationships (Law 1992).

We find ANT useful for our purpose because it is also a way of exploring the mechanics of power associated with the translation and co-configuration of tasks by students. Simply put, students interpret learning tasks assigned to them and this interpretation influences what they actually do (Goodyear and Ellis 2007). The translation model of power in ANT tells us that a token, which in our case would be a learning task, spread across time and space is in the hands of the people, or students in our case, who decide how to deal with it (Latour 1984). The token can be taken by the actors or it can be dropped, modified, added to or appropriated. This aspect becomes critical when students are studying online and in the absence of the spatial and temporal structures that are commonly imposed on them on campus. Take the following clips from one of the videos submitted to us as part of the #OurPlace2020 competition as an example (see Fig. 1). The video is a time-lapse of the student working on their desk. There is a laptop, a variety of stationery items including coloured pens, ruler, sticky tape, scissors and notepads. The student’s hands are illustrated hard at work using the laptop computer and writing on several notepads and

Fig. 1 Student 27, 'A week of hard work at study desk', video shared on Facebook

sheets of paper. What we find interesting is how the student organised their tasks for one unit of study across the week. On Monday, the student is making a plan, on Tuesday is the Zoom class. On Wednesday, they take notes, and on Thursday, they review their study notes. And finally, Friday is dedicated to homework. The tools are still the same while the activity is different each day. This is an example of how student agency comes into effect. The student has translated the task into activities that are spread across time and constructed their learning space where they work seamlessly with digital and non-digital tools and resources.

Problematising the Postdigital Learning Spaces Through ANT

Space is not a fixed entity in ANT. It can only be understood as a system of relations which are wrapped in complex networks (Murdoch 1998). In other words, space is constructed within networks. In this sense, the focus of our analysis would be on how things are separated and bound together within heterogeneous networks. Entities that are separated by time and space can be drawn together in a network of relationships. According to Murdoch (1998), networks pleat and fold space-time as he explains, '[t]imes, like spaces, are, therefore, folded into complex geometries and topologies by series of connections and disconnections. There is no one time or space, rather there are a number of co-existing space-times' (360). We can use this conceptualisation of time-space relations in a network to broaden our analytical lens for educational design. Using #OurPlace2020 competition entries, we want to explore the intricate space time relationship in a network where the spaces of the heterotopic university and real world are blurred.

Let us examine space first. In one of the entries, Student 1 records a handheld shaky camera shot of his space, describing it as he goes. He starts by addressing the

camera and other students with, ‘Hey guys this is [Student 1], how you doing man? I would like to show you guys around the place where I use as a tutorial room, lecture room, library, restaurant and a place to live.’ He then zooms in on a table and states, ‘So this is basically my study desk.’ (See Fig. 2, Row 1, Image 2) and then moves on to a paper pinned to the wall adding, ‘and this is my schedule’ (see Fig. 2, Row 1, Image 3). The camera pans back to his face as he adds, ‘You guys may be confused so where is laptop right. So now since the whole house is study area so I take my laptop outside the bedroom’. He then turns the camera to show the room, ‘That is my lecture room – you guys can understand right? The more open place will be lecture room.’ (Fig 2, Row 2, Image 1). The camera is then briefly turned towards the open door of a small room while he says, ‘and my bedroom will be as a tutorial [room]’ (Fig. 2, Row 2, Image 3). The student then signs off by saying that his place is messy because he has been staying inside for 24 hours and then he tells everyone to stay safe.

In this video, a direct link is created between the heterotopic university spaces and the real-world space where this student lives. In this network, the spatial boundaries of a university life are displaced while the real-life living space is becoming heterotopic to accommodate the various activities a student normally engages in while on

Fig. 2 Student 1, ‘[student’s name] study room – tutorial room, lecture room, library, restaurant and a place to live’, video shared on YouTube and Facebook

campus. According to Thomas (2010), we have failed to recognise the influence of physical learning space, which carries sensory memories and can induce powerful emotions. The author states that traditional learning practices are mapped to the formally designed learning spaces, and in many ways, the physical environment gives context to the types of activities engaged in the space: hence, for our student, the larger living room is lecture hall, while the smaller bedroom is tutorial room. The laptop in this video is almost invisible and appears in only one shot from a distance when the student talks about his living room being the lecture room. Although the student knows that his audience would expect to see the laptop, hence his statement ‘you guys may be confused so where is laptop right’, its existence is not pronounced. The only learning resource focused on is the timetable printed on a piece of paper and pinned to the wall. In this postdigital learning space, the laptop facilitates learning in the living room, the bedroom or the kitchen, but on its own, it is taken for granted.

While those inside academia may consider the university an amalgamation of heterogeneous spaces that are entangled with different spatial stories and experiences and co-constructed with various human and non-human entities, for those outside, such as nearby residents, the university may seem detached and appear as a homogeneous heterotopic place in relation to its surroundings (Beyes and Michels 2011, 2014). Perhaps the notions of space and place need to be defined to understand different conceptualisations of heterotopic characteristics of universities. Ferreday and Hodgson (2010) differentiate between space and place and state that the former is more important for the idea of heterotopia. According to the authors, space is more abstract while place is tangible and has clear boundaries. For those outside the university life, the campus has clear boundaries — although many campuses do not. Space as an abstract concept has no boundaries and can denote an area, distance, or a temporal period (Ferreday and Hodgson 2010). On this point, we disagree with the authors in that space can also have boundaries, albeit blurred, as these are constructed through social practices. For instance, a study period for a lecture or a tutorial has no tangible boundaries, but its duration is influenced by those tasked with designing learning activities, as well as institutional constraints such as timetabling of physical spaces. In this network, the study period is bound to and entangled with the design of the physical university spaces, which has temporarily encroached on the student’s real-life space redefining it to align with a lecture and a tutorial room.

Studying Everywhere and Anytime

Traditionally university campuses have well-established socio-material networks which provide support to students while they engage in a variety of highly structured activities. Lectures, tutorials and exams are organised through well-ordered slices of time, which differ from the flow of time in the real world, reinforcing the heterotopic and transitory nature of the student experience. The spatiotemporal organisation of learning on campus is reflected in students’ practices, such as being present in a certain class during a specific period and engaging in set activities. However, students no longer need to be physically present on campus to engage in formal university

Fig. 3 Student 6, ‘Tip for motivation: Stay connected - You’re not alone’, video shared on Facebook

learning. Technology has enabled students to log in, zoom in, learn remotely in synchronous and asynchronous modes. On the surface, this new postdigital world seems almost emancipatory. But how do we design for this world when we know that learning is both socially and physically situated (Goodyear and Ellis 2007). One recent study showed that students with a higher cumulative grade point average (CGPA) habitually study at home more often compared to those with a lower CGPA who are dependent on various forms of scaffolding and support to do well (Vanichvatana 2020). Yet it is difficult to produce empirically verifiable propositions about how physical space affect results at university (Temple 2014).

We propose taking the activity-centred position suggested by Goodyear and Carvalho (2019) which stresses the importance of ‘what the learner does – physically, mentally and emotionally’ (56). In this approach, mapping the complexity of heterogenous networks of human and non-human entities can increase the success of designs for learning. #OurPlace2020 data indicated the importance of taking into consideration the socio-material networks available to students outside of the boundaries of the university campus. One of the video submissions to #OurPlace2020 provided an opportunity to briefly observe a student’s representation of how they studied away from the campus. The video starts with upbeat motivating music and a shot of a well-organised desk with a laptop, a wireless mouse, a calculator, a printer in the back, a pen and notepad and several books and notebooks. The student almost heroically puts on his glasses and starts writing (Fig. 3, Row 1, Images 1 and 2). However, 2 hours later, the student loses motivation and drops his head on the desk (Row 1 Image 4). He determines that he needs a break from studying and leaves the room. He sits down to eat with a sad emoji displayed on screen (Fig. 3, Row 2, Image 2) and lies down flat in the middle of a hall, with the text on screen reading ‘slowly losing all motivation’ (Fig. 3, Row 2, Image 4), then tries to play table-tennis on his own (Fig. 3, Row 2, Image 5). He finally returns to his room and sits at his desk with his head down, indicating an emotionally low atmosphere (Fig. 3, Row 3, Image 1). Suddenly, a paper ball hits the back of his head. He looks around and sees his friend standing at the door with the text on the screen reading ‘get it together bro’ (Fig. 3, Row 3, Image 3). The upbeat music starts again as the student stands up tall with the text on screen reading ‘thanks bro’. The two students then jump in the air in

celebration with the text on screen reading ‘tips for motivation: stay connected – you’re not alone’.

Research indicates that students can easily create spaces for their own learning even in environments not set up for studying, such as the home or a cafe (Gourlay and Oliver 2016). The challenge however is determining the multitude of various factors influencing motivation. Since this video was recorded in the context of the lockdown during the Covid-19 pandemic, it illustrates the breaking down of usual social structures for this student and the yearning for a return to normalcy. Analysed through ANT, the video exemplifies the socio-materiality of learning and the need for a broader analytical lens for mapping the complex heterogenous networks students create outside the campus.

The Amazing Zoom Setup

The amazing Zoom setup is a 5-second video of an image with a sparkle filter applied to it (see Fig. 4). The image is nested within a frame with the text over reading ‘Zoom setup’ and ‘amazing set up!’ There is a laptop facing the camera, an iPad next to it, a pen and a notebook on the table with headphone and two drinks. There are handwritten notes stuck on the wall. The video illustrates the image with shimmering stars and sparkles, as if belonging to a magical unreal world. Being on Zoom creates an illusion of being in many spaces at once. Students and educators jointly create a liminal space where interaction happens across many time zones in real time. It is a world within a world analogous to Foucault’s (1986) ship as a heterotopia.

Since our university utilises Zoom for synchronous classes and connection to students, the digital story analysed here was labelled ‘Zoom setup’. Many universities use other platforms including Skype, Microsoft Teams, Blackboard Collaborate, Google Meet and Discord. We therefore extend our conceptualisation of the liminal space for interaction across time zones to these tools as well.

Within higher education, Zoom and other synchronous connection platforms have enabled educators to continue their lessons and engage students in online classes. Many educators faced challenges unknown to them prior to the Covid-19 pandemic as they were thrown into a new world with which many had little experience. While teleconferencing has been around for some time, their heterotopic characteristics have received little attention. Krikonis and Valsiner (2008) refer to how teleconferencing is a taken for granted heterotopia where ‘mutual joint action takes place in a real-yet-unreal space’ (71). Zoom suddenly introduced a set of new expectations to which students must adhere. Some educators introduced new rules of engagement such as you must turn on your camera, maintain eye contact, keep audio muted until called upon, use the hand-raised symbol to ask a question and use the thumbs up or down to indicate agreement or disagreement (Hogan and Sathy 2020). In the absence of systematic learning design frameworks when designing for Zoom, many educators have taken to blogs and personal websites to share best practices when teaching on Zoom. Contradictory tips are not uncommon in this area with various educators advocating for certain practices such as using a virtual background or allowing students to use the chat function (Hogan and Sathy 2020) while others advise against

them (Tierney 2021). Within this network, Zoom has created a heterotopia with its own rules and expected behaviour.

We are beyond blurring of the boundaries when a heterotopic space is created within the student's real world. Gourlay and Oliver (2016) asked students to draw a map of where they studied. One student drew his home far away from the university and emphasised the separation by drawing a line in between them, separating the two. The student provided an explanation for this stating that he likes to have a change of activities while he is at home and aims to minimise the extent to which university work crept into his home life (Gourlay and Oliver 2016). While we cannot generalise from the experience of one student preferring to separate their student and home life, it nevertheless prompts us to acknowledge students' lives and realities outside the heterotopic university structures and to broaden our conception of learning spaces. This preference to separate the personal from academic life also extends to digital spaces as Adams et al. (2018) illustrate how students felt uneasy about using their personal Twitter accounts for classroom exercises, which they saw as blurring of the borders where their university lives became fused with their personal lives.

While our focus in this paper is on the blurring of the boundaries between the physical spaces of the heterotopic university and real-world living spaces where students engage in learning, we also acknowledge that the digital world has disrupted the traditional boundaries of educational institutions. Most virtual learning environments function as spaces with closed boundaries and entry points protected by passwords where content is structured and strict hierarchies dictate levels of access to administrators, course designers, teaching staff and students (Bayne 2004). These environments often mimic the heterotopic elements of traditional university power structures, including assessments, compliance and strict surveillance that track students' movements and interaction in the system. However, educators increasingly challenge these structures by introducing more open forms of learning environments that are loosely structured with minimum boundaries where distinctions are blurred between private and public, formal and informal, popular and academic (Bayne and Ross 2013).

Postdigital Tools of Trade

One of the submissions to #OurPlace2020 shows how a DIY tripod for a video assignment is constructed and photographed, blending analog and digital in an interesting assemblage (see Fig. 5). The digital camera for remote learning is to sit on the physical, and pokes fun at digital binaries with a DIY aesthetic (Cramer 2015: 22). The backdrop for the camera and cords is a large eye, propped on a bright plastic stool and has a postdigital sensibility where technology has almost become human, so deeply embedded is it embedded in everyday existence (Matthews 2021). While Manovich (2020) argues that Instagram has created an 'aesthetic society'

Fig. 4 Student 35, 'Zoom setup', shared on YouTube

Fig. 5 Student 10, 'DIY "tripod" for video assignment - feeling grateful', photo shared on Facebook

where producing beautiful artefacts is at the heart of our social experience, this student's makeshift composition proudly emphasises its lack of pretension as an anti-aesthetic. This student has defined their own unique assemblage of educational tools and space in response to an assessment and tags her post as 'feeling grateful'. ANT

Fig. 6 Student 11, ‘Study corner’, photo shared on Instagram

can tell us much about the entanglement of the heterogenous entities in this network, including the digital and non-digital tools, the student’s socio-material world, the assessment requirements and the student’s plan of action to satisfy the assessment requirements.

In the ‘Study Corner’ (Fig. 6), digital technology in the form of the laptop is taken for granted as necessary for study, so much so that it needs no label, unlike the other analog, physical details of the room such as the whiteboard and pin-board. The student also indicates how they manage their time with props to segment study into breaks, to snack and keep dehydrated and to sketch and read for inspiration and

Fig. 7 Student 24, ‘ginger_ginnnnn’, photos and video shared on Instagram

Fig. 8 Anthropomorphic digital spaces shared on Facebook: Image 1, Student 18, ‘My room at the Amazon rainforest’; Image 2, Student 25, ‘Home office for uni work’; Image 3, Student 9, ‘calculators and pink bunny’

focus. Even natural light from the window is said to be motivating, and possibly points to study as a day-time activity, again alluding to the student’s personal organisation of space and time. Students using technology for logistical purposes, to keep on track, manage and regulate their studies emerge as a common theme in the #Our-Place posts, suggesting that educational tasks need to be designed for more ‘active, participatory or creative uses of technology’ (Henderson et al. 2017: 1577). Looking at this network closely, we can argue that although the laptop is not given a label and might be taken for granted, some of the other entities are organised around the activities that are to take place through the laptop. For example, the ‘[b]oard to track everything to-do including lectures’ would have no function without the laptop since it is through the laptop that the student would access and engage with the lecture. The ‘pin-board to stick podcast ideas on’ need a laptop to access the podcasts.

Postdigital Spaces and Youth Culture

The sequence in Fig. 7 demonstrates how many posts tap into meme culture as described in postdigital theories (Cramer 2015). This student’s pet both participates and disrupts sterile high tech visions of learning remotely. The study environment is softened, and the text on the laptop (‘financial distress costs’) juxtaposed with a scented French candle. The middle part of this digital story is a video snippet in which the student asks her cat to ‘consider the objective function’, in a playful sense creating her own learning community, very much in synch with pop-culture oriented content that is user generated on the web (Shifman 2014). The student role-plays a traditional lecturer-student dynamic with her cat, as expert to novice.

Many of the students’ study spaces show a resistance to the impersonal nature of technology-mediated learning, and their personal spaces counteract the non-human with a preference for soft toys and animals, candles and plants. For example, there is a photo of a study space which features only the Amazon rainforest and creatures, hand drawn on the wall, and no technology or study tools (see Fig. 8, Image 1). In another photo, a laptop and a computer which displays the University’s Learning Management System are central to the study space; a pastel blue bunny and a

Fig. 9 Student 26, ‘❤️🧐’ and, ‘Study and yoga?’, photos shared on Instagram

fluffy dog toy sit on either side of these technical study tools (see Fig. 8, Image 2). Similarly, a student anthropomorphises a soft toy and juxtaposes the pink bunny to the clean, technology surrounds of the laptop, iPad, calculators and stylus in Fig. 8, Image 3. Here, this bunny mimics the student poised before a Zoom meeting displayed on the laptop.

Physical activity emerges not only as a coping mechanism, but also to structure time and space in a non-heterotopic study environment (see Fig. 9). In the background, we see digital and analogue entangled (laptop and notebooks are placed alongside each other on the coffee table), heterotopic and personal spaces entwined (the large screen displays university materials but is balanced by the acoustic guitar), and material and digital boundaries are blurred as students creatively redesign their material spaces to meet their learning goals (Carvalho and Yeoman 2018). In the second post of her story, ‘study and yoga’, the student enacts physical yoga virtually into her digital life; study takes on a posthuman aspect. Two emojis, one pink heart and another ‘nerd face’, act as the title to this submission. Emojis are a pictorial form of communication that enables one to express feelings and emotions, to add a certain tone to written messages, add emphasis or to neutralise text messages. It is important to understand that emojis have become a significant part of communication for young people and have become a means to refining the complexities of spoken language into a universal pictographic format (Giannoulis and Wilde 2019). The meanings attached to emojis are culturally constructed. As for the title of this submission, emojiopedia.org defines the nerd face 🧐 emoji a self-deprecating way of calling oneself a nerd and the pink heart within a larger heart ❤️ emoji is known as the growing heart and denotes outpouring of emotions.

Fig. 10 Five posts from left to right: Student 7, ‘Study desk photo shared on Instagram’; Student 13, ‘Surf with me - feeling blessed’, photo shared on Facebook; Student 8, ‘Study room entry’, photo shared on Facebook; Student 15, ‘A beautiful night in uni’, photo shared on Facebook; Student 21, ‘What’s your main focus today?’, photo shared on Instagram

Implications for Learning Design

Some students in #OurPlace2020 chose to show us their ‘perfect’ study spaces, almost as if this is what the university expects (see Fig. 10). Here we see well-resourced study spaces and students posting about using multimedia to keep motivated. One student offers study tips, posting about free software for presentations and about their brand of speakers (and personal style of music) to keep motivated. Similarly, the photos ‘Study room entry’, ‘Surf with me - feeling blessed’, ‘A beautiful night in uni’ and ‘What’s your main focus today?’ showcase sophisticated set-ups with contemporary lighting and equipment. In these staged shots, resources and digital devices are neatly arranged around the monitor or screen, peripheral to the dominant screen and its display.

The digital stories submitted to #OurPlace2020 are an almost utopian image of the real-world learning spaces. The heterotopic universities mandate certain behaviours and create expectations of how spaces are constructed, and it seems that these students have tried to replicate these expectations in their posts. We are also cognisant of what we do not see. We are missing the stories of students having to access online contents through small phones and inadequate devices, of students with no dedicated space for learning, sharing devices with parents and siblings, slow Internet connections, lack of family support, disruptions and inequalities in family circumstances (Andrew et al. 2020). Digital inequity may be hidden from educators. Looking down from a privileged position at the top, the digital is only noticed by its absence (Jandrić et al. 2018). However, for many students, the digital is a privilege or even luxury. We need to take this understanding and broader perspective into consideration when we design for learning.

While the pandemic has accelerated postdigital disruption of the concept of university as heterotopia, our data shows that learning activities are still structured and segmented in slices of time and entangled with physical spaces associated with traditional seminars, lectures and workshops. In this paper, we have highlighted how a broader and more holistic approach to educational design requires rethinking the learning environment to include students' real-world spaces through a postdigital paradigm that moves beyond the narrow heterotopic spaces of traditional university campuses.

The institution can learn from our own and our students experiences in the Covid-19 pandemic when designing for learning in a postdigital world. Traditional structures of higher education are open to question when educational practices are open to real-world spaces. Learning at university traditionally represented a liminal space between social structures, a movement away from school, and a waystation before work and career. The pandemic has altered these structures. We may still seek to label learning as in-person or online or hybrid or remote, but a postdigital understanding points towards learning that supports students to navigate their uncertainty and transitive state. Postdigital learning is not conceptualised in terms of physical or technical infrastructure, is not exclusively asynchronous or synchronous, but rather entangled across analogue and digital worlds. We find traditional university structures that privilege an on-campus experience are problematic for a postdigital age. We need to explore more about changing university structures and mindsets that are rusted into a predigital mode of learning, beyond delivery modes and infrastructure

Boundaries between the students lived engagement with the spaces and practices of the university, and those expected of them by the massified university are blurring. A far more sophisticated understanding of the messy intersection between school, university, work and community is needed. Similarly, we need to move past arbitrary distinctions and embrace design for students that acknowledges university as only part of a complex, networked world, one in which the social structures and the tools and practices that enable them are neither utopian nor democratic.

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Declarations

Ethics Approval Ethics approval was granted by the University of Sydney's Research Integrity and Ethics Administration — project number: 2021/131. Furthermore, written consent was provided by the participants featured in Figs. 2 and 3.

Consent to Participate Not applicable.

Conflict of Interest Not applicable.

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