Covid-19 lock-down: hybrid learning cases using the lens of the Zone of Possibility

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Abstract

Our chapter responds to the need to investigate and represent a more nuanced theoretical proposition in the area of Hybrid Learning Spaces (HLS). The work is positioned along two axes of pedagogical theory and practice implications derived from case studies. The following research question (RQ) originates from the Zone of Possibility (ZoP) body of work and offers a lens to guide the examination of three cases that have emerged in the Covid-19 lock-down. RQ: In the context of Hybrid Learning Spaces, how can the design process and design thinking advance or bridge 'successful communication' and an understanding of social context in a ZoP? Following a brief outline of our research method, in this chapter we explore ZoP/Hybrid Learning Space pedagogy through three cases: Bristol Jazz Workshops, Goethe University Frankfurt students, and Bournemouth University (UK) Nursing academics. All three cases surfaced the importance of approaches to bridging; they further illustrate that 'interpenetration' is an important HLS concept that requires further elaboration. Our findings suggest that contextual framing, pedagogic implications and implications for design are the critical factors for case study analysis. In terms of implications for future design, we specify the meta-design principle called 'Respect Learners' Zone of Possibility'.

Introduction

The leap to online learning as a response to Covid-19 has, for those in academia, seen the shifting of learning from a blend of online and face-to-face, mainly framed by the affordances of institutional Virtual Learning Environments. However, a severe limitation is the organisational perceptions that adding on a video-conferencing platform (e.g. Zoom, Go-to-meeting, MS Teams) has transformed the underpinning pedagogies and is facilitating active student-centred learning. As our individual work, leisure and learning all intertwine in the same 'place' that can typically be our home, the spaces and ways in which we collaborate are as yet under theorised, and the technological determinants driving collaborations are not yet fully understood. Our chapter responds to the need to investigate and, indeed, represent a more nuanced theoretical proposition. Thus, the work is positioned along two axes of pedagogical theory and practice.

Stommel (2012) suggests that a "hybridity pedagogy" changes the notion of "place of learning" and invites us to fundamentally rethinks our conception of place. Indeed, Ellis and Goodyear (2016, p. 150) have argued that the connections between "place and learning" can be subtle and powerful and

that to "understand them, one needs to understand complex, shifting assemblages involving human beings and things: material, digital and hybrid"; they argue that the boundaries between the physical/virtual are becoming increasingly permeable. For educational contexts, the implications are the enhancement and promotion of study activity in space and time. Cook's (2015) work identified two dimensions of hybridity in learning spaces: the interweaving of formal and informal social structures in an activity system, and the combination of physical and digital tools mediating an individual's interaction with the world and society. Drawing upon the work of Bernstein (2000) and Daniels' (2008, p. 164) "zone of possibility", and framed by Educational Design Research, Cook (2015) argues that: "people connect and interact through a hybrid network of physical and technology-mediated encounters to co-construct knowledge and effectively engage in positioning practices necessary for their work". The propositions that underpin the theoretical framing of this chapter, and future work, are twofold. First, the proposition that people "learn from each other in groups (a Zone) that calls for orchestrating social supports (navigation and bridging aids) so that learners can benefit from the ideas of others (Possibility) … [this can be] seen as a framework for enabling a "Zone of Possibility" " (Cook, 2015, pp. 125). Second, the proposition that because "bridging positioning practices as successful communication were found to be significant" in the Zone of Possibility (ZoP), the concept if the ZoP "should be redefined as a **place** where individuals can overcome the constraints of expectations and power structures to effect desired change" (Cook et al., 2020, p. 1158, our bold).

Furthermore, Ellis and Goodyear (2016) propose four key constructs that are needed for progress in learning space research. We observe that the ZoP concept aligns with aspects of these constructs. The first key construct is learning capability, and the ZoP is viewed as learning as participation, in that it "foregrounds knowing rather than knowledge and shared activities rather than possessions" (Ellis and Goodyear, 2016, p. 154). In relation to second key construct of space and place, we agree that it is helpful to "think of space as that which allows movement, then place is a pause; each pause in movement makes it possible for location to be transformed into place" (Ellis and Goodyear, 2016 p. 157, citing Tuan, 1977); the transformations looked for in a ZoP have much in common with place. We further agree with the observation made in the context of the third key construct of built form (i.e. physical, virtual, hybrid) that "technological developments are leading to a growing interpenetration of the material and the virtual 'worlds' " (Ellis and Goodyear, 2016, p. 158). Our case analyses demonstrate this fluidity, and this plays forward into our findings. The fourth key construct explores the affordances of 'objects, artefacts, tools and texts'; clearly these "add value only to the extent that they are assembled together into effective configurations" (Ellis and Goodyear, 2016, p. 160).

Our research question (RQ) originates in the body work summarised above (i.e. Cook, 2015; Cook et al., 2020), and offers a lens to frame the examination of our emergent cases:

RQ: In the context of Hybrid Learning Spaces, how can the design process and design thinking advance or bridge 'successful communication' and an understanding of social context in a ZoP?

Bridging arises when people from various backgrounds make connections entering social networks that offer more inclusive opportunities. These kinds of networks literally create 'bridges', "which is they allow people, who might not have had the possibility to encounter one another in their daily lives, the opportunity to become acquainted" (Tomai et al., 2010, p 265). One of the main conclusions of earlier work is the importance of bridging positioning practices as 'successful communication' and an understanding of social context in hybrid contexts, i.e. the ZoP (Cook, et al., 2020). Case study 2 provides an example of supporting bridging where a tutor places students in a study group and steps back. Supporting large-scale bridging as a mechanism for expanding an individual's social context (to effect desired change) will include an undertaking to develop or adopt 'low flying' or 'low overhead' meditational tools that address ethical and privacy concerns of citizens. These should also sit easily in users' learning, cultural and work practices, (e.g. see Case 3 redesigns for Digital Wellbeing). The ZoP can thus be viewed as having significant overlaps with Ellis and Goodyear's high level description of the meaning and structure of learning space, where a learning space can be "viewed as different configurations and affordances of space designed, provided, supported, evaluated and renewed to enable learners to develop their understanding and skills" (Ellis and Goodyear, 2016, p. 175).

To set out investigating our RQ, our stance is that the ZoP concept needs to be viewed as a more specialised and design led learning space. We frame our Hybrid Learning Space pedagogy (the ZoP) through three cases: Bristol Jazz Workshops, Goethe University Frankfurt students, and Bournemouth University (UK) Nursing academics. Each is singular and unique, but all provide examples of the ZoP learning space transformed to learning place. This chapter offers a brief overview of our research methods, reviews the cases and concludes with contextual, pedagogical and design implications; the latter includes a ZoP meta-design principle (an overview) called "Respect Learners' Zone of Possibility".

Research Method

To explore our Research Question and challenge our own preconceptions of space, we draw upon participant research methods (Case One/Two), which can broadly be framed within the ethnographic tradition (Kawulich, 2005). However, when researching in a period of exceptional change, such as Covid-19, the more traditional notions of what it means to be a participant observer are bounded by established ways of working. Thus we drew upon the work of Ropers-Huilamn and Winters (2010), exploring their approach to complexity in theoretical and paradigmatic understanding. This draws upon the intersectionality between theorising, knowing and implicating, and offers insights into negotiating the fluidity of spaces 'between' wholeness among individuals and groups (Case Three). The jazz case we offer in this chapter can thus also be interpreted in terms of the 'wholeness' in and amongst the individuals and the group. The 'space in between' concepts offer a 'way of knowing' and frames Cases 2 and 3. Case 2 is located in the space where more formal teaching and learning takes place. Case 3 is positioned as a loose collection and collaboration of individuals and groups seeking solutions as they move learning online.

Research schema: Each case starts with a summary of: contextual framing, case description, pedagogic implications and implications for design; this approach sets the scene for the reader; and this format follows through to the conclusions. Table 1 provides an overview of the three cases.

	Case 1: Bristol Jazz Workshops: a holistic hybrid approach	Case 2: Goethe University Frankfurt students	Case 3: Bournemouth University: supporting student nurses learning during the pandemic
Informal/formal	informal learning in the community	formal learning online	Semi-Formal??
Number of participants	10	12 participants 'face-to-face' (2019) and 7 participants 'fully online' (2020)	62 Nursing tutors in the first instance, cascaded to 5 departments and over 150 individuals
Research tool/analysis	Observations/evaluation : field notes and analysis of video calls; texts and images used with participant informed consent.	Observations/evaluation : questionnaire and tutor field notes; informed consent obtained.	Observations/evaluation : learning design case following Conole (2013)
Researcher role	Cook acts as a participant observer	Cook tutor	Holley was a co-facilitator
Research foci / emphasis	Bridging digital literacy / designing for interpenetration	Following iterative critical thinking cycle/pattern is important	'Vocabulary' of digital learning success framed the Community of Practice. Learning design supported staff by offered mechanisms for scaling up

Table 1: Overview of case studies

All three cases follow Yin (2014, pp. 16) in that they are empirical investigations that explore a contemporary phenomenon within a real-world context. The analysis adheres to the guidance of Ellis and Goodyear (2016, p. 174), whereby "learning space includes all material and non-material elements of the space and their affordances for learning in relation to learning outcomes … Simply put, if the space supports experiences that promote understanding and related learning outcomes, then the purpose of the space is realised". Thus we draw upon multiple sources of evidence, and triangulation of methods, through this lens.

In the first case Cook acts as a participant observer (Kawulich, 2005) as well as being the workshop double bass player. Cook discussed the research proposition with his fellow workshop participants; explained the role of researcher and the concept of Hybrid Learning Spaces. Informed consent was obtained from all participants in Case 1 and 2 for anonymous reporting of comments and evaluation results. Names used are not the real names of participants. In Case 3 Holley was a co-facilitator

with the faculty learning technologist in a 'summer of tech' in which fluid 'radio show' type workshops scaffolded the efforts of staff to move their resources online. In particular, they worked with a team of academic nurses, who were required to meet a new set of guidance offering far more freedom of curricula delivery, yet paradoxically constrained by their professional body requirements. This final case makes no claims to formal evaluation, but instead takes a reflexive stance in developing theory into the new fluidity of space and place afforded by the Covid-19 pandemic. In terms of the various research foci that Ellis and Goodyear (2016, p. 164) put forward, our cases take the following emphasis. Case 1 offers the physical (the musical instruments) and the virtual (the means of communication) to take a holistic stance in its coverage of the situation; Cases 2 and 3 offer a "Virtual learning spaces (formal) where someone in a teaching role is supervising activity in the space" (Ellis and Goodyear, 2016, p. 164).

Case 1. Bristol Jazz Workshops: a holistic hybrid approach

Contextual framing
 The Bristol Jazz Workshop is one of the country's longest established jazz education projects. Normally, four groups meet once a week in the back room of an English pub in term time under the guidance of a professional musician-tutor. Each group is introduced to 3-4 tunes a term and is guided to play as an ensemble tutor-written orchestrations of the tunes, and are shown how to adopt a 'jazz language' (e.g. when improvising) by their tutor. The four ensembles would perform in front of each other at an end of term event. Many of the musicians have been in these ensembles for several years. Due to the Covid-19 lock-down, the Bristol Jazz Workshop went fully online in summer semester 2020 (April to July), with some surprising consequences.

Case description
In the new online set up, the workshop tutor Sam would email the group individual musical parts for a new piece to be studied. The group would discuss this in a weekly Zoom meeting and organise the process of recording first, and remotely, the rhythm section and lead melody line (a quartet) version of the current tune with Sam providing critical and motivational comments. Other workshop participants would then be asked to add their melody line (head-in and head-out). In the ensuing weeks Sam would send more music sheets that covered ideas about how to solo on the tune (jazz language); these solos would be added to the recording.

Cook took great interest in the fact that when faced with the challenge of recording individual parts and solos at home, probably for the first time, Chris the alto sax player reported that he got the best sound quality results when resorting to recording in his wardrobe. Fred, one of the sax players, provided another example of hybridity: half way through recording one of his solos apparently, as reported in a Zoom meeting, his son came in to ask him a question.

Fred kept playing sax with one hand and pointed to the door with the other; on his recorded solo in one of the four tunes completed that term you can clearly hear his son asking "why?". This is a good example of the way that technological developments are leading to a growing *interpenetration* of the material and the virtual 'worlds' (Ellis and Goodyear, 2016, p. 158), here we get the

interweaving of work and our family lives; the digital and the physical; our leisure and learning seem to coexist in the same space and time. In the early days when they had technical difficulties, Sam and Nigel had a partner-wife hovering at the side of the screen who sorted problems out for them. On one occasion Carl (piano and a surgeon) was on call and had to travel off to his hospital and hence missed the video conference. The point being again, that due to the lock-down many of us have mashed-up (interpenetration) our work, home and family lives, our leisure, our teaching and learning.

The group's version of Recado Bossa Nova (*), one of four pieces that we learnt, was achieved by the players sending over their recorded parts digitally, with Cook compiling it all layer-on-layer in to Ableton Live 10 Suite software (generically known as a Digital Audio Workstation). Sam did the arrangement(s), critiqued and encouraged. Indeed, in Zoom and emails we learnt much about the jazz language and musicians under study. By common consent it was observed that it had been lots of fun listening to Sam 'go off on one' about the likes of Chet Baker and Hank Mobley; this brings jazz to life online, particularly the mixed views on Chet's singing! Recado Bossa Nova was written by Luiz Antonio and Djalma Ferreira; it was recorded famously by Hank Mobley featuring Lee Morgan on the 1965 album Dippin' (**). These musicians play Recado faster than us but make it seem effortless; the groove is very danceable and the solos are excellent. For Cook's solo in our version (only his 3rd attempt at a 'take' and it shows!) he is using one of the lessons from Sam, sent via PDF and explained in Zoom, called "Developing the simple line using Harmonic Minor Scale".

The above analysis (i.e. the text in the section above) was provided to all participants via Facebook and email. Comment was invited. Here are three interesting responses:

Fred: "Great analysis John [i.e. Cook], with home schooling, home working and then doing the workshop online it's been a particularly digital few months. In the wider sense this period has probably pulled an older population back in sync in regards to the possibilities of technology. I was sceptical at first but Sam structured it really well and the recording work gave us targets and more importantly a focus. I found recording frustrating (but always did historically) and I think it makes you focus on the bad bits more than you perhaps do in live performance....it adds a certain amount of tension to improvising and playing as well. However it has been very helpful and thanks for pulling that side of things together. If god forbid, we are locked down again I wouldn't hesitate to repeat the process again as music is always more satisfying communally".

Sam: "Well said John Cook and well put together. I think we've all done well to adapt so quickly and make the most of the situation. Really enjoyed the sessions and the results are excellent!"

Nigel: "Just to say thanks for all the time and expertise you've put into making us sound at our best! It would have been a far less rewarding experience without the incentive of these recordings".

Supporting the bridging of digital literacy (related to the **RQ**) was an early challenge and needs more work in an area where participants did not have the basics to record at home. However, Sam the tutor said to Cook in an email towards the end of the course: "everyone seemed to have learned

a lot from recording and hearing themselves placed in the track". Cook's response was to agree that all musicians had risen to the challenge; despite the playback not being exactly what was expected/wanted. Carl and Cook were of the opinion that we had learnt more than in the normal face-to-face workshops.

Pedagogic implications
Although tutor led (partially formal learning), this case is being used as an example of informal learning under disruptive constraints caused by Covid19, where participants are tutored online about a specific tune and specific musical scales in order to create their joint artefact (a digitally recorded tune, which acts as a replacement for the end of term performance). However, participants also learned informally from each other and private research. For example, they learnt about spatial acoustics (recording may be better in the wardrobe), about using conference call software, and about digitally recording themselves. Also, the case provides at least one example of the important Hybrid Learning Space concept of interpenetration.

Implications for design
Bridging digital literacy was sometimes tricky in the early stages of the online course and more work needs to be done in this area, e.g. where participants did not have the basic equipment and knowledge of how to record at home. Similarly, designing for interpenetration needs more thought.

Case 2. Goethe University Frankfurt students

Contextual framing
The short course under discussion here is called 'Digital tools and innovation' and takes place as seven sessions of around 3 hours each. The course was written and taught by the first author (Cook) in English at Goethe University Frankfurt. Because English is the students' second or third language, group sizes were small and ranged from 12 in 2019, and 7 in 2020. The course explored how to design technology to mediate learning in traditional and emerging sites of lifelong learning. Students were usually at undergraduate level (but occasionally Masters level) and were usually taking a major in Educational Sciences. Teaching-learning took the form of a combination of lectures, seminar discussions, group work and individual student work. The course was first taught face-to-face in 2019 as two 'compact weekends' and appears as a face-to-face, taught, case study in Cook et al. (2020). In the Summer of 2020 this same course was repeated but took place entirely online due to Covid-19. Formal course evaluation results (these are handled by a central university service) from both years will be compared to address the RQ.

Case description
In April-May 2020 Cook acted a tutor for a small group of 7 students on the short course 'Digital tools and innovations' at Goethe University Frankfurt. This was the first time Cook had performed wholly online teaching and learning. The small seminar group used Adobe Connect. Cook produced lesson plans (with learning outcomes) for all his sessions and shared them with learners in advance. Following lots of preliminary email support, in the first session some scene setting took place from Cook. All sessions involved lots of active, participatory, small group learning. Dialogue and co-

inquiry took place in a Zone of Possibility (see *Implications for Design* above). The sessions in particular generated a good debate about the ethics of Google Lens (a camera based, object identification, mobile phone app with an underlying neural network). Cook's goal was to meet the course learning outcomes by using bridging to create a ZoP. Break-out groups were crucial for bridging in a participatory way. A break-out is where the tutor sets the task and allocates/negotiates the time but is not present in the break-out group; these are easy to achieve in Adobe Connect and which can do it automatically.

Evaluation of student perception of any course is run by a central university unit at the request of the tutor, who gives a brief explanation of the evaluation including details of privacy and anonymity, and then gives the link to the students so they can carry out the preset survey on their own. Note that scores in the evaluation were: 1 = do not agree at all, 2 = do not agree, 3 = mostly do not agree, 4 = mostly agree 5 = agree, and 6 = agree entirely. In the 2019 the small group more or less consistently gave scores 6 out of 6 on all centrally provided survey questions. In the 2020 evaluation the scored dipped slightly to around 5 out of 6. The 2019 evaluation was done retrospectively whereas 2020 evaluation done while the session was active. Specifically, evaluation results averages from 8 scored questions were as follow. Summer 2019 average score was 5.9 (n = 4). Summer 2020 average score = 5.2 (n = 7). That said, one student's 2020 evaluation comment seems to support the assertion that dialogue and inquiry took place that was participatory in nature: "Good introduction to a little-known area. Constant and extensive exchange between students, as well as the promotion of participation. Very nice, flexible and pleasant atmosphere". Further, the 2020 answer to this question: "1.8 The other students contribute to a constructive learning environment" increased on the 2019 score of 5.5 to score 5.9 in 2020 (the maximum is 6). However, disappointingly the answer to the question "1.1 Attending the course has resulted in a noticeable increase in my knowledge level", dipped a full point from 5.6 in 2019 to 4.6 in 2020. Perhaps this response to the open ended question explains this: "1.11 Please name three things about this course that could be improved upon": "The discussions were quite short due to the technological novelties. Not really possible to go into a lot of detail the relevance of the topic is clear, I would have wished for a better in depth knowledge".

The balance online needs to be struck between making short informed presentations, promoting participation and keeping the attention of students; the cues for the need to go into depth in a subject may not have been present online. Also, we acknowledge that the survey sizes are small, but for us it is more about digital dialogues and how this feeds into the ZoP and design; indeed this case has touched on points around patterns, plus iterative and agile design. Furthermore, the lessons learnt from this case were taken into the first author's two Winter Semester 2020 courses (both wholly online) allowing him to achieve nearly 6 out of 6 on all the survey feedback.

Pedagogic implications
Break-out groups have the potential of promoting student dialogue one step away from the power imbalance of having the 'professor' in the room (bridging). Tasks need to be carefully designed to encourage this.

Implications for design
The following iterative cycle/pattern is important: tutor led introduction of concepts; then break-out groups for promoting student dialogue one step away from the power imbalance; report back to the group with questioning from peers and tutor; repeat the cycle with slighter harder tasks, highlight the need for critical thinking (e.g. arguments backed-up by evidence that is correctly cited and referenced); eventually flip the classroom so that learners develop agency to research a topic in groups and present to the class; ongoing linking of the previous to the assessment for the course in order motivate participation.

Case 3. Bournemouth University: supporting student nurses learning during the pandemic

Contextual framing
The requirement to move learning online under the Covid-19 lock-down immediately posed unique challenges to Nursing teams across the UK. Delivering a Professional Curricula under Nursing and Midwifery Council (NMC) accreditation is complex, and rightly, highly regulated. The call in March 2020 by Public Health England mobilised student nurses, who were within six months of graduation, into clinical settings to support the NHS; they subsequently completed their degrees in practice. Highly specialist academic staff lost access to their health simulation teaching suites overnight; this all required fast pace adjustment to continue to offer learning opportunities supporting students to develop skills that needed to be 'signed off' as a pre-cursor to entry to their practice placements.

Case description
The Nursing team pride themselves on delivering a high level of content knowledge and skills to trainee nurses, and the approach very much draws on the Community of Practice (CoP) work that Wenger (1999) advocates. The work on the 'humanisation' curriculum led by Todres et al. (2009) influenced and created a shared ongoing culture of value-based teaching and learning. As the Corona Virus pandemic impacted, this motivated team wanted the very best for their students. The curricula offering normally comprises predominantly face-to-face content and supported skills lab work. With the clinical skills emphasis, blended learning typically took the form of materials uploaded to the institutional Virtual Learning Environment (VLE) and the use of Talis-Aspire reading lists. A fast transition was needed to move content online for our cohort of now distance learners.

The institution responded to Covid-19 with what could be described as a 'streetlight approach' (Cohen et al., 2020); valuing what can be measured and setting in place a suite of ever-expanding instructions for academic and professional staff on 'how-to' use the tools available in the VLE. This disjoint between the formal university offering and the practice of the community can be located in the Ellis and Goodyear's (2016, pp. 150) high level analysis of the complexity of research into learning spaces. Our educators were confronted with the challenges of promoting 'connected learning' to a now fragmented student body; some in the hospital wards completing online final units for their degrees; some at home with their own complex work/life challenges; some needing

expert skills sign off; and all needing a reconnection with their studies, values and obligations to the profession they had chosen.

Holley (second author) and Moran (the Faculty Learning Technologist) quickly identified a deep unease with institutional suggestions for teaching online. Online delivery was viewed as being a 'second rate' experience for students; and, furthermore, staff were concern about their skill set in delivering in this unfamiliar setting. The ZoP was familiar to Holley; and in it she identified the offering of a safe 'place' where individuals could overcome their own constraints of expectation, a place-binding (Ingold, 2011, in Ellis & Goodyear, 2016) at the intersection of the paths people create and follow in their daily lives. The community focus of the nursing team prompted the 'Corona Virus Teachinar Unit' initiative, an agile response, enabling a contextual and targeted peer learning space. Run as a daily 'Tech Chat Show', all were welcome, to share concerns, worries, successes and to draw upon the expertise of the facilitators. It quickly evolved into a community hub for checking in, scenario planning, and to gain insights into the uses of Technology Enhanced Learning (TEL) tools in pedagogical settings, framed in a low hierarchical (power) structure in that there was no obligation to feedback, to be chased up for implementation data, or to attend. The sessions had any formal 'demo' sections recorded, and the conversation themes identified from the session summarised and posted by Holley/Moran on the announcement page of the Unit. The approach was framed as a hybridity or duality where the values underpinning the nursing ethos (on one side), ran in parallel to community building between the facilitators, nursing academics and nursing academics within their wider teaching teams (on the other side). This duality was rolled out as a community/sharing model of practice as nursing academics worked with their nursing students in the very different set of delivery circumstances posed by Covid-19.

Conole (2013) suggests learning design can be codified in a number of different representations, some of which we list below. The 'Actioned through' label alongside illustrates how we built this aspect into our design, and also includes related brief comments on how it links to the ZoP:

- Textually based narrative case studies, describing the key features of the Learning Activity and perhaps barriers and enablers to its implementation.
  Actioned through: 'The John and Debbie Daily Chat' write up, drawing upon the narratives shared in the daily drop-in session. Although we had online learning expertise, we deliberately avoided power structures and facilitated a shared construction of knowledge with our participants, as they interacted with us and each other.

- More formal narratives, against a specified formal methodology such as the concept of pedagogical patterns, which provide a structured mechanism for representing good practice.
  Actioned through: Holley personal blog, 'Hashtags Handhelds and Handbags' (***) where links to useful external resources were highlighted, tweeted and picked up by the wider sector and some staff. In this way we supported bridging in ZoP terms.

- Visual representations, such as a mind map or formalised UML (Universal Modelling Language) use case diagram.
  Actioned through: Moving towards pedagogical conversations, visual models have been

shared to conceptualise student digital learning journeys; co-created by the facilitator and the community online at a particular online session.

- Vocabularies (Currier & Campbell et al., 2005), such as taxonomies, ontologies or folksonomies
Actioned through: Daily online drop-ins, run through the 'Virtual classroom' where TEL vocabulary was demystified and unpacked in relation to the user context. Again, in this way we supported bridging.

- Models (Mayes & Freitas 2004; Conole 2010), foregrounding a particular pedagogical approach (such as instructivism, problem-based learning or an **emphasis on a dialogic** or reflective approach).
Actioned though: a socially-constructivist lens, drawing upon the ZoP and deliberately aimed to minimise power imbalances between the 'experts' (the facilitators) and the 'staff as students' whom are experts in their discipline. The dialogic was our preferred model and enabled us to weave in Hybrid Learning Space pedagogy (Cook et al., 2020).

Thus the nurses were simultaneously the student and the teacher, the community builder and the modeller of community building; modelling the nursing values with compassion in strange new circumstances, we sought to reconnect the students with the values of their chosen profession. This blurring of boundaries (delivered, with heartache, worry and anxiety) has echoes with the 'unexpected and interleaved experiences' described by Cohen et al. (2020, pp. 1039). These occurred as students and academics found themselves on Covid wards together (many of our nursing academics signed up for the 'nursing bank to support the NHS' initiative); and these blurring of boundaries (interpenetration) also occurred where both academics and students found themselves working around complex home/caring/childcare arrangements so typical of a feminised workforce. The interpenetration between the material and virtual became the norm, as students and staff learned very quickly to harness their mobile devices to access learning 'on the move' in the complexity of different spaces. Digital Wellbeing, a key component identified by Biggins et al. (2017), was at the heart of our approach to interacting with staff, as they self-developed alongside the more interactive sessions offered.

Pedagogical implications
Minimise power relations through dialogic ways of working, where existing knowledge and expertise is acknowledged, and the conversation is about multi-modality and bridging for the end-user, the student.

Implications for design
Our learning design supported staff by offered mechanisms for scaling up (e.g. deploying 'The John and Debbie Daily Chat' write up, these drew upon the narratives shared in the daily drop-in session). Key emergent design features were co-creation, visualisation and confidence in the 'Vocabulary' of digital learning success framed the Community of Practice approach with our Nursing academics. The approach was quickly escalated to the Faculty Incident Group; we were requested to roll out the approach across all five departments.

Conclusions

We now present three categories of conclusions that address our Research Question: contextual framing, pedagogic implications and implications for design.

Contextual framing
Each case study is unique and bounded by its specific context. By drawing them together, framed as responses to Covid-19, and viewed through a reflective lens, we can identify the point of orientation that Ellis and Goodyear (2016, pp. 174) identify, i.e. that "learning outcomes of students in learning space give meaning to the structure of physical and virtual learning space and to their interplay. In this sense, learning outcomes drive the activity of learners who engage with the elements of the space in order to achieve them". Indeed, the participants in each case gave their own meaning to the structures of physical and virtual learning spaces and the interplay between. In Case One, the music was the primary medium, and it is interesting to observe how the desire to co-create enabled bridging between virtual and material spaces; this encompassed the physical, the music instruments, and the associated online communications referring to digital artefacts; these are so much more than 'just' the spoken word. The bridge is the technology and the dialogues were mediated by the tutor, and these enabled the whole flow of creativity, information and knowledge construction that we see in expert and learning musicians. The second case offers bridging positioning practices through the student contributions to the learning environment; and the technology mediates the power role of the tutor, to enable a more (but not totally) equal power relationship. Learning outcomes were formally given at the start of the short course but were framed so that students could co-construct meaning in groups. The third case study actions bridging through the lens of pedagogical dialogues, co-created visual models and, similar to case study two, the tutor was actively seeking to orchestrate social supports and frame the 'place' as the ZoP.

Our work has methodological implications, as the insights of the participant observer and reflexive practitioner framed by the transformative possibilities of intersectionality offers what Ropers-Huilman & Winters (2010, p. 40) suggest are ways to disrupt, transgress and deconstruct unified, homogenised categories of identity, and its associated possibility of changes in social structures. Through the lens of the ZoP, it is a place for individuals to effect desired changes. By clearly acknowledging the power relationships in our different case studies, we "remember we are always implicated both by what perspectives are represented in a given situation and by those that are not represented" (Ropers-Huilman and Winters, 2010, p. 46). Access to technology is not free, and the use of technology does not occur in a political vacuum. We are mindful of our positions of privilege as we seek to develop theories and models called for by Ellis and Goodyear (2016); and welcome the ethical stance that framing this body of work on hybridity entails (Cohen et al., 2020, p. 1042). The combination of observational and experiential data of this work aligns with the need that Ellis and Goodyear (2016, p. 181) argue is vital.

Pedagogic implications
The various forms of hybridity found in our cases offer examples of the interpenetration of online and off-line spaces, and not a naive notion of a 'merging' solution. All cases illustrated that

'interpenetration' is an important hybridity concept, and we argue the distinction Ellis and Goodyear set out (2016, p. 181) needs further work post-Covid. Their work seeks answers to broader questions around how to distribute activities across a workspace, ways of collaboration, modifying spaces to make them better for ones' activity – we can see that intentions are far clearer in a fully online taught world. Observing what Fred (Case 1) actually did when his son burst in to the room whilst a recording session was underway is important from a HLS perspective. Fred also commented that "In the wider sense this period has probably pulled an older population back in sync in regards to the possibilities of technology. You could feasibly run a workshop with anyone in the world. I was sceptical at first but Sam structured it really well and the recording work gave us targets and more importantly a focus". Clearly dynamic bridging took place in Case 1 with places within places and further inter-generational interactions and affordances seeming to be coming to the fore. Also, the participatory notion of how all the participants in Case 1 move within the ZoP, how they inhabited and reconfigure the space-place, how they (we) created and experienced a congenial learning places can be clearly identified.

Bridging digital literacy (related to the **RQ**) was sometimes problematic in all cases; in Case 1 in the early stages participants did not have the basics to record at home; in Case 3 expertise was at first in face to face teaching. That said, in Case 3 the agile Corona Virus Teachinar Unit proved crucial; the interpenetration between the material and virtual became the norm, as staff and students learned very quickly to harness their mobile devices to access learning 'on the move' in the complexity of different spaces.

Implications for design: Meta-design principle "Respect Learners' Zone of Possibility"
Design principles emanate from and connect to theories of learning and instruction, they can be at several levels of specificity; the one presented here articulates the Zone of Possibility concept based on the above case study implications. The meta-design principle is called "Respect Learners' Zone of Possibility" and captures abstract theoretical ideas and projects them into the problem (practice) domain. Our meta-design principle follows this template (see Cook et al. 2020): (i) Description, (ii) Theoretical background, and (iii) Tips (Challenges, Limitations, Trade-offs, Pitfalls).

(i) Description
Professionals, students and life-long learners engaged in social learning want to present themselves in the best possible light, i.e. people will position themselves in different ways depending what they deem as the best way from the perspective of their professional, student or life-long learner role, contingent on the circumstances of a particular situation. They do not want to expose themselves professionally, academically or personally. Also, learners are being positioned by actors in their activity systems. Consequently, we are designing for a Zone of Possibility (ZoP). This means that we as designers need to be aware of potential multiple layers of power relationships and design bridges when, for example, learners ask for or give social support or receive recommendations. First, encouraging learners to observe peer group interactions to build up a picture of the cultural norms of the group they are entering; assist construction of an online persona by building on the profiles of key peers who seem closely related. Second, when learners interact, they bridge (connect) to the cultural aspect of learning by bringing to light the alternative views held by other learners and the

criteria used to interpret ideas. Third, enable learners to identify when authorities (actors) are positioning them within the group. In this way our tools mediate identity and knowledge building through participation in a Zone of Possibility.

(ii) Theoretical background
Background theory is as follows. Vygotsky's (1930/1978) Zone of Proximal Development (ZPD) is commonly understood as the range of practices which the learner cannot invoke on her own, but can engage in with the support of a 'more capable peer'. Positioning is viewed in recent Cultural-Historical Activity Theory (e.g. Daniels, 2008) as being in a systematic relation to the distribution of power and principles of control. Thus social positioning underlies practices of communication and gives rise to the shaping of identity. The implication is that a 'subject' inhabits a space of possibility, thus a subject would be represented by a socially structured Zone of Possibility rather than a singular point. Bridging arises when people from various backgrounds make connections entering social networks that offer the chance to be more inclusive (Tomai et al., 2010, p 265).

(iii) Tips (Challenges, Limitations, Trade-offs, Pitfalls)
When designing for social learning in Hybrid Learning Spaces, you must always acknowledge and respect the existing social and organisational fabric which determines learners' perception of which practices will be appropriate. This is the Zone of Possibility (ZoP): the range of bridging practices within the ZPD which the learner perceives as socially and organisationally acceptable and that further acknowledge power structures and positioning practices.

Proposing any new practice has the potential to fail. Thus a trade-off between the following ZoP tips will help:

- As Case 1 showed, bridging digital literacy can sometimes be tricky (a challenge) in the early stages of an online course and needs attention, e.g. where participants did not have the basics to record at home. A tip is to present examples of the new practices to learners before implementing them (e.g. a recorded artefact) to confirm that they perceive them as acceptable.
- Before you introduce any innovation, (if possible) the challenge is to carefully observe and analyse existing practices to identify the boundaries of the ZoP. A Case 2 derived challenge is the requirement of following iterative cycle/pattern: tutor led introduction of concepts; then break-out groups for promoting student dialogue one step away from the power imbalance of having the 'professor' in the room; then report back with questioning from peers and tutor; repeat the cycle with slighter harder tasks highlighting the need for critical thinking (e.g. arguments backed up by evidence that is correctly cited and referenced); eventually flip the classroom so that learners develop agency to research a topic in groups and present to the class; linking the previous to assessment for the course in order motivate participation.
- As Case 3 illustrated, an important challenge is to start from where your learners are, rather than notions of where they 'should be' (the latter is a pitfall), as is respecting and acknowledging existing skills and expertise brought to the 'Zone'. Driving fast paced

change in a pandemic is about working with people *with and through* their values, and the innovation is through helping them to modify and change their space/place perceptions.

- Designing for interpenetration is a challenge and needs more work.

Further work will take forward the above meta-design principle as the basis for developing mediational tool for Digital Wellbeing.

Links
* Link to Workshop recording of Recado Bossa Nova on SoundCloud:
https://soundcloud.com/dovetailcollective/recado-bossa-nova-final

** Hank Mobley & Lee Morgan - 1965 - Dippin' - Recado Bossa Nova:
https://www.youtube.com/watch?v=9MC74Bw-RGI

*** Hashtags Handhelds and Handbags. http://drdebbieholley.com/blog/

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Bios

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