

*"This is the peer reviewed version of the following article: White, S., White, S., & Borthwick, K. (2020). Blended professionals, technology and online learning: Identifying a socio-technical third space in higher education. *Higher Education Quarterly*. <https://doi.org/10.1111/hequ.12252>, which has been published in final form at <https://doi.org/10.1111/hequ.12252>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions."*

## **Blended professionals, technology and online learning: Identifying a socio-technical third space in higher education**

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### **Abstract**

The idea of a 'third space' located between academic and professional domains has proven useful in exploring changing academic and professional roles in higher education, including in online learning. However, the role of technology in accounts of third space activity remains under-explored. Drawing on research into the introduction of Massive Open Online Courses (MOOCs) at three UK higher education institutions, it is argued that both social and technical factors must be considered to understand, plan for and manage the third space roles and structures which emerge in such initiatives. This study focuses on learning designers, confirming that they act as third space 'blended professionals' in the somewhat distinctive case of MOOC development. However, it also proposes the concept of a socio-technical third space in which blended professionals act as hubs in a metaphorical network of activity, using social and technical means to shape their own roles and those of others.

La idea de un "tercer espacio" situado entre los dominios académicos y profesionales ha demostrado ser útil para explorar los cambiantes roles académicos y profesionales en la educación superior, incluyendo el aprendizaje en línea. Sin embargo, el papel de la tecnología en los relatos de la actividad de dicho tercer espacio sigue siendo poco explorado. Basándose en la investigación sobre la adopción de cursos abiertos masivos en línea en tres instituciones de educación superior del Reino Unido, se argumenta que se

deben tener en cuenta tanto factores sociales como técnicos para comprender, planificar y gestionar las funciones y estructuras del tercer espacio que surgen en tales iniciativas. Este estudio se centra en la figura de los diseñadores de aprendizaje, confirmando que actúan como "profesionales mixtos" del tercer espacio en el caso característico del desarrollo de los MOOC. Paralelamente, el estudio también propone el concepto de un tercer espacio socio-técnico en el que los profesionales con competencias y responsabilidades mixtas actúan como centros de una metafórica red de actividad, utilizando herramientas sociales y técnicas para dar forma a sus propios roles y a los de los demás.

### **Conflict of interests statement**

The authors are or have been employed at universities which are members of the MOOC consortium from which the case studies are drawn.

### **Key words**

Third space, blended professionals, learning designer, Massive open online course, MOOC

### **Introduction**

Studies of UK, US, and Australian universities have identified the concept of third space roles in higher education which straddle academic and professional functions (Whitchurch, 2008, 2009, 2012). This idea of third space has proven useful as a means to understand the dynamics of new projects and initiatives in higher education, including the roles and relationships of those engaged in technology enhanced learning projects (Whitchurch, 2012). These projects are frequently identified as sites of third space activity, yet research in this area has yet to focus on the role of technology within these social contexts.

In contrast, investigations into the interaction of technologies, social practices and social contexts is seen as crucial in other domains, such as Web science (Halford, Pope, & Carr, 2010) and social informatics (Sanfillippo & Fichman, 2013). Such research reveals how technologies become embedded and configured in their context of use and is invaluable in resisting technologically determinist characterizations of technologies as fixed entities which bring with them inevitable social effects (Selwyn, 2010). Deterministic accounts of this kind predicted the rise of Massive Open Online Courses (MOOCs) as a disruptive "tsunami" or "avalanche" surging toward and forever transforming higher education institutions and the roles of academics within them (Bulfin, Pangrazio, & Selwyn, 2014, p. 296). More nuanced analyses find that such predictions are characteristic of a "Silicon

Valley Narrative” which serves to mask attempts by private sector interests to gain access to “broken” systems of state education (Weller, 2015, p. 1).

Despite exaggerated claims about an “online wave” of MOOCs, these courses are distinct from conventional forms of face-to-face and online learning in important ways. Defined here as “a course aiming at large-scale interactive participation and open access via the Internet” (Littlejohn, 2013, p. 2), the massive and open properties of MOOCs have proven significant as they fail to ‘fit’ conventional university functions of research, teaching and service (Daniel, 2014). This lack of fit echoes Whitchurch’s characterization of the third space in HE, where universities grapple with internal and external pressures and drivers - often linked to technology and the knowledge economy - and where conventional roles and boundaries are challenged (Whitchurch, 2012).

Online learning specialists thus have a key role in helping new courses ‘fit’ institutional contexts. These specialists are known by various titles (learning technologist, instructional designer), but this study uses the term learning designer to account for a changing role emphasising social constructivist learning theory and Web-based learning environments (Kenny, Zhang, & Schwier, 2005). The term learning designer is used here to describe a role which demands pedagogical expertise, project management, academic writing, resourcing and “delivery strategies” (Seeto & Herrington, 2006, p. 742). In line with Whitchurch’s (2012) use of the term, a role is defined as functional activity related (in this case) to MOOC development. This differentiates the concept from professional identity in that “identities organize the meaning while roles organize the function” (Castells, 1997, p. 7). The term educator is used to identify university academics involved with MOOC development projects.

This study examines the extent to which these educator and learning designer roles (amongst others) develop within a third space in the novel context of MOOC development. A further distinctive feature is the integration of third space concepts with a socio-technical approach. This provides a way to examine the embedding of this novel technology in an organisational context whilst privileging “neither the technical nor the social” (Meyer, 2006, p. 37).

Using “concise characterizations of technology” alongside “relevant social theory” (Kling, Rosenbaum, & Sawyer, 2005, p. 59), this multi-site case study of three UK universities produces nuanced depictions of MOOC development and the evolving roles of those involved. The findings reveal that learning designers carve out a significant hub-like role in MOOC development, in an environment characteristic of Whitchurch’s third space, yet constructed via both social and technological means. It is argued, therefore,

that it is useful to conceive of a ‘socio-technical third space’, developed via skilled negotiation of roles and the strategic embedding and configuration of technology. Insights gained can be used to inform decision-making on related organizational structures, and the recruitment, training and development of staff working in this area.

### **Learning designer roles in MOOCs and conventional online learning**

The origins of massive open courses can be traced back to the open educational resources movement in the early 2000s and experiments in network-based connectivist learning in Canada in 2008, at which time the term MOOC was coined (Yuan & Powell, 2013). However, Yuan and Powell note that it was not until 2011 that courses gained widespread media attention. Such attention focused on high-profile ventures in the US in which the underlying pedagogy was a more conventional one-to-many, ‘transfer of knowledge’ model. Systematic literature reviews have identified the need for more research into those who produce MOOCs (Liyanagunawardena, Adams, & Ann Williams, 2013) and the influence of MOOCs on academic roles and practices (Veletsianos & Shepherdson, 2016). Extant studies tend to focus on perceptions and experiences of educators working on MOOC projects, emphasizing the need for teamwork and collaboration (Najafi, Rolheiser, Harrison, & Håklev, 2015) or speculating on the need to rethink teaching practices related to MOOCs (Blackmon, 2018). However, both Najafi et al. and Blackmon are based on single institution case studies and take no direct account of the learning designer perspective. Studies which survey MOOC-producing institutions more widely do exist, but also lack the learning designer viewpoint (Bayne & Ross, 2014; Zheng, Wisniewski, Rosson, & Carroll, 2016).

In the absence of a focus on learning designers in MOOC-related research, the broader online learning literature provides some insight into course development roles. One strand of research focuses on relatively well defined, functional roles based in centralized departments (Caplan & Graham, 2008) in which designers simply translate academic content into “instructional materials” (Smith & Ragan, 1999). However, more nuanced accounts from Hong Kong and the UK focus on learning designers in a “brokering” (Keppell, 2007) or “bridging” role (Cowie & Nichols, 2010, p. 77) sensitive to “distinctive cultures” across academic departments. Focusing on relationships and fluid structures in this way allows recognition of socio-cultural context in course development work (Campbell, Schwier, & Kenny, 2009).

### **Online learning development as a site of third space activity**

Interestingly, social context and fluid institutional structures are identified as significant in earlier studies which are predictive of Whitchurch’s subsequent work on third space

professionals in online learning. Technically focused learning technologists are described as “peripatetic” yet “pivotal” in online learning projects (Beetham, Jones, & Gornall, 2001). Their role is “hybrid, marginal yet central to institutional processes and change” and involves both “open” and “hidden negotiation” in progressing course development (Oliver, 2002, p. 246).

Production of educational materials more widely has revealed a range of influences, both social and technological on the content of such materials. Indeed, the mediums, roles and processes of production can shape the form and substance of educational materials, as with producers of open university audio-visual resources or academic textbook editors and publishers (Broich, 2015).

Both Oliver (2002) and later Whitchurch (2012) cite the UK’s 1997 Dearing Report into higher education, and Gornall’s (1999) resultant concept of “new professionals” as influential on their understanding of changing roles in universities. These roles do not fit conventional categories of “academic” or “non-academic”, “teaching” or “non-teaching” roles (1999, p.44). Significantly for this paper, both studies highlight technology as having a part to play in many of these new roles. Later work by Oliver supports this idea, identifying learning designer roles which “cross the boundaries of disciplinary tribes, [and] share learning and teaching through the use of technology” (2012, p.222). These ideas evoke the bridging or brokering role discussed above, yet none of these studies intersect directly with Whitchurch’s work on the distinctive border-crossing roles of the third space “blended professionals” (2009, p.407).

Bisset identifies third space as influential on practices of “educational designers” in an Australian university, highlighting their increased “strategic agency” (Bisset, 2018, p. 2) in these roles. However, she does not make use of the concepts of blended professionals or the dimensions of blended activity, which may have great explanatory power if applied to the work of learning designers. Consequently, this study seeks to examine the extent to which learning designers draw on dimensions of “spaces, knowledges, relationships, and legitimacies” characteristic of the work of blended professionals whose roles span conventional domains in higher education (Whitchurch, 2009, p. 407). According to Whitchurch, these dimensions of blended professional activity allow individuals flexibility to modify the sometimes ambiguous professional and academic roles and structures (spaces), whilst integrating different forms of professional or academic knowledge (knowledges). Blended professionals are also able to create networks, alliances and autonomy (relationships) whilst challenging established roles and achieving credibility in a space where they both do and do not belong (legitimacies).

With the exception of preliminary work on this study (White & White, 2016), research into MOOCs as a site of third space activity is lacking. However, it is possible to infer links from the findings of Zheng et al. (2016, p. 216) on the “uncertainty”, “vague guidelines”, “conflict” and “invisible systems” which educators highlight in their experience of MOOC development. These observations also resonate with studies of conventional (non-MOOC) online learning roles such as Oliver’s identification of “hidden negotiation” in online learning projects (2002, p.246). Also relevant is Keppell’s comment on the need for learning designers to operate in poorly structured situations, whilst maintaining diverse identities and establishing legitimacy in the eyes of educators (2007).

Alongside these possible indications that MOOCs are constructed in the third space, are the growing number of studies arguing that although technologies do not directly cause social effects (Selwyn, 2010; Oliver, 2011), they should not be viewed as simple “tools” in online learning (Brown, 2016, p. 6). Indeed, research from field of social informatics has long argued that technologies and their social contexts of use have a complex and co-constructive relationship (Kling et al., 2005; Sanfillipo and Fichman, 2013). The fact that Whitchurch frequently identifies online learning as a site of third space activity provides an opportunity to fill what may be a socio-technical ‘blind spot’ in understandings of third space.

In light of these gaps in the research, this study applies insights from the empirically grounded concept of third space to MOOC development, whilst using techniques from social informatics to consider the interaction of technology within this third space. The following section outlines how the socio-technical lens of socio-technical interaction networks (STIN) is applied to the study of MOOC development roles.

## **Researching technology in context**

In attempting to gain a nuanced view of technology in its social context, a multi-site case study approach is used. This primarily qualitative approach focuses on construction of meaning and experience in the complex context of educational organisations (Kirkwood & Price, 2014). Importantly, it attempts to take a nuanced view of technology, researching the construction of MOOCs in a “socially grounded” way which acknowledges the “messy realities” of how technology is actually used (Selwyn, 2010, p.70).

Drawing on preliminary interviews with experts in the field (n=6) and a desk study of UK MOOC initiatives, 3 sites were purposively selected from a limited number of MOOC-producing universities. These locations – universities A, B and C - differed in

size and approaches to MOOC development. However, they also possessed sufficient commonalities (shared platform provider, coverage of subjects, gender balance of participants) to unite the sites as a set or “quintain” (Stake, 2013, p. 23). In total, 34 semi-structured interviews with educators, management/professionals and learning designers were conducted across the three sites. Participants were identified via snowball sampling, thus identifying “information rich cases in the field” (Suri, 2011, p. 69). In addition, document analysis was employed, focusing on 39 documents (95 pages in total) relating to MOOC development at the case sites (see Table 1). Document analysis was used as “methodological and data triangulation” (Bowen, 2009, p. 29) and to resist a reliance on one-dimensional, “impressionistic” depictions of activity (Silverman, 2013, p. 241).

Table 1: Data collection methods and samples at the case sites

Research site	Number of interviews	Number of documents analysed	Participant role		
			Educator	Learning Designer	Prof/mgmt
University A	10	10 (25pp)	7	2	1
University B	14	14 (47pp)	6	5	3
University C	10	15 (23pp)	6	2	2
Total	34	39 (95pp)	19	9	6

After identification of sites and participants, the research design involved three phases:

1. Data collection: semi-structured interviews (fully transcribed), document analysis, observational field notes
2. Thematic analysis of documentary and interview data
3. Analysis and comparison across the three case sites, considering STIN (see below) and third space perspectives

Following social informatics studies by Meyer (2006) and Villar-Onrubia (2014), data collection was initially guided by the socio-technical interaction networks (STIN) analytic strategy. Using a set of seven heuristics<sup>1</sup> (see footnote), the strategy aims to balance concerns with social and technical factors, allowing researchers to generate nuanced depictions of “a network that includes people (money, skill, status), documents and messages, legal arrangements, enforcement mechanisms, and resource flows” (Kling, McKim, & King, 2003, p. 48). Alongside identifying elements of these networks, key periods of discussion and change can be highlighted. These “system architectural choice points” can be crucial in understanding how technologies become embedded, constructed

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<sup>1</sup> The heuristics, adapted for this study aim to identify (1) relevant system interactors, (2) core interactor groups, (3) incentives and impediments, (4) excluded actors and undesired actions, (5) communication forums, (6) resource flows, and (7) system architectural choice points. The final step is to map architectural choice points to socio-technical characteristics of the system.

within and indeed co-construct their contexts of use.

As the STIN strategy welcomes incorporation of relevant social theory (Kling et al., 2003) the lens of third space was used to further interpret MOOC development at the case sites. STIN and third space ideas are aligned in their constructivist epistemological underpinnings, each recognizing social interactions as contingent and negotiated in context. Thus, in line with Ashwin's methodological thinking in education (2012, p. 944), the qualitative data and ‘concise descriptions of technology’ are used to “knock against” socio-technical and third space theoretical concepts in order test or refine understandings of them.

### Co-creation and Learning designers as ‘hubs’ in MOOC development networks

Surface level analysis of interview data supports findings from the literature in highlighting ‘co-creation’ as core to development of online courses. Indeed, one outcome of the STIN analysis was the identification of a broad range of actors with whom learning designers interact as part of MOOC development initiatives. Learning designers dealt with educators, senior management, and professionals in ICT, marketing, legal, and media production roles. MOOC development involves a network of relationships between these actors and relevant resources, rules and technologies, with the learning designer operating as a central ‘hub’ role within these networks (see Figure 1). Significantly, these networks of activity are also shaped by decision-making relating to ‘non-human actants’ – elements such as technology, resources, guidelines and processes.

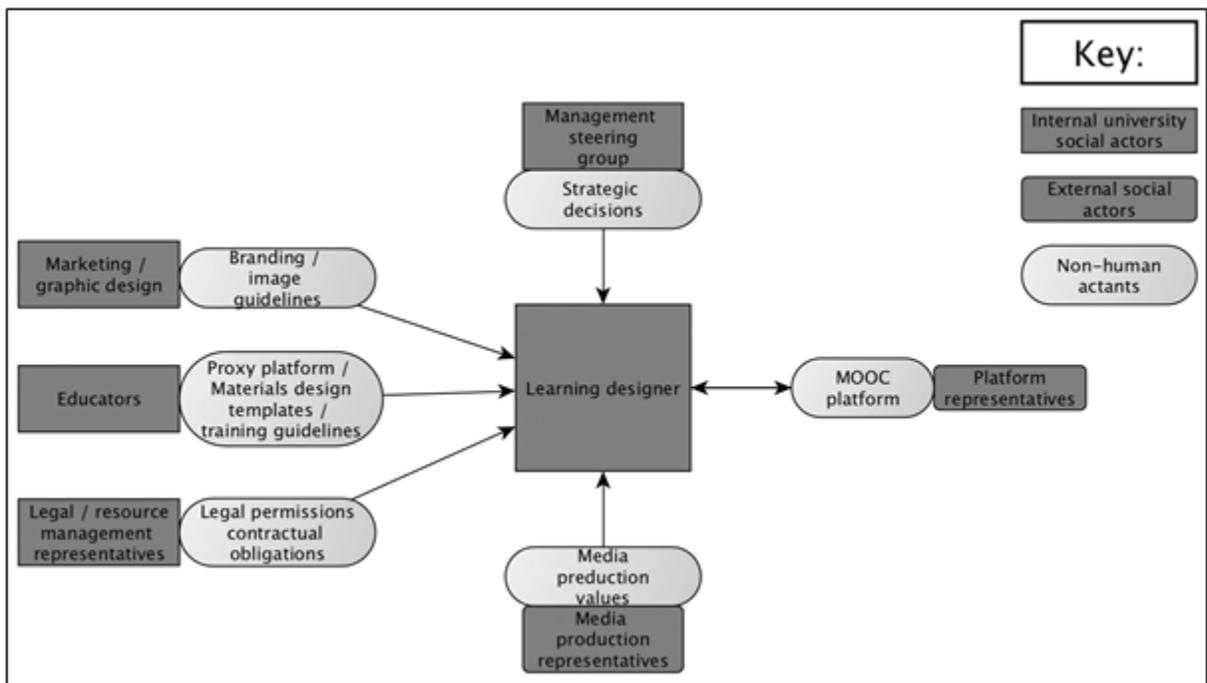


Figure 1: Simplified STIN diagram depicting the hub position of learning designers in socio-technical networks of MOOC development at University A, B and C

Learning designers across the cases are found to occupy this hub position in networks of MOOC development activity, but exercise different levels of control over the projects in each case study context. The different learning designer as hub roles were characterized in the analysis as:

- ‘learning designer as controller’ (University A)
- ‘learning designer as broker’ (University B)
- ‘learning designer as trainer’ (University C)

In working with educators, the balance of control over responsibility for materials development varied from a high level of learning designer control at University A to a more moderate level at University C. At University A, most educators had no access to the MOOC platform itself, so mainly provided Learning designers with simple text documents which were then developed by the learning designers into learning activities for use on the platform - the ‘learning designer as controller’ model. In contrast, University C created a ‘learning designer as trainer’ model, attempting to train educators in production of course materials, allowing them some freedom to develop materials and quite extensive access to the platform. University B fell between the two on this continuum of control of materials and platform access, with learning designers developing a ‘broker’ role between sometimes entrenched and competing interests (see Figure 2).

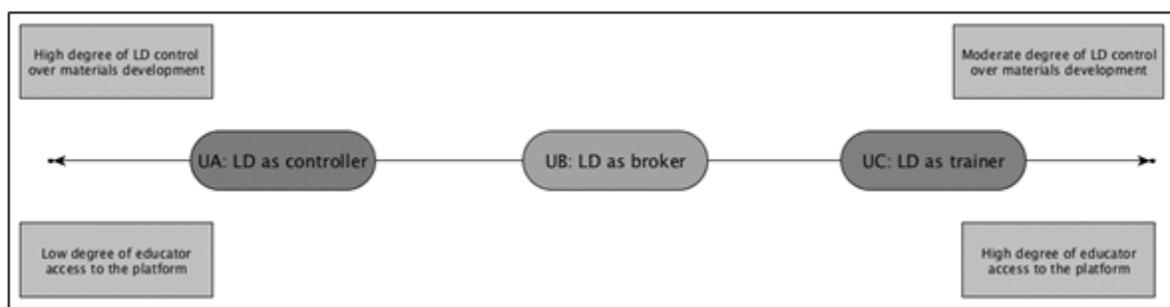


Figure 2: Differing levels of learning designer-educator control over projects at University A, B and C

Though formal oversight of course procedures existed, analysis of documentary and interview data established that particular levels of control were not pre-determined or instituted by management in formal role descriptions, nor negotiated directly between

educators and learning designers as pedagogical decisions on learning design. Rather, these arrangements were shaped over time, primarily by learning designers as hubs, attempting to meet deadlines for complex projects which required collaboration across internal boundaries of institutions, and interaction with external entities such as the MOOC provider or video production companies. Decisions often focused on processes of course production, looking to “standardize” complex procedures through “MOOC-specific” arrangements (Learning designer, University B) and presented technological requirements (of the MOOC platform or video production, for example) as the basis for these decisions.

## **STIN analysis of MOOC development activity**

### **Dealing with complex MOOC projects by working in the third space**

The differing models of MOOC development at the case sites arose as the massive and open elements of these courses fail to ‘fit’ established university structures and roles. What’s more, the high-profile nature of the ventures was frequently cited as a pressure on those involved. The courses were associated with potential reputational enhancement and reputational risk for the institutions and individuals involved.

Initial frustration over slow, “tedious”, “trial and error” development processes (educators, University A and C) caused tensions and even “continual fighting” between contributors (learning designer university B). These problems emerged as existing roles and boundaries strained to accommodate the range of actors and challenges involved in complex MOOC projects. Responding to these tensions and challenges, learning designers moved quickly into third space roles to facilitate “negotiation of difference” and “fruitful collaboration” (Whitchurch and Law, 2010). Learning designers reported having to “find their way into systems” (learning designer, University C) as they wrangled with the “mysterious process” of MOOC development (learning designer, university B).

One advantage of working in a third space where boundaries and roles are ambiguous was the flexibility and even unspoken authority which learning designers found they could attain. In mid-late stage MOOC development, learning designers found they could “create their own role” (learning designer, University B) and even “steer [educators] in the right direction” (learning designer, University A). This freedom was reportedly enough for learning designers to “overrule” educators on a range of course development decisions in which learning designers “had a very free hand” (learning designer, University B). Even in the somewhat freer ‘learning designer as trainer’ model at

University C, learning designers retained “tight processes of oversight” and even rejected some course materials submitted by educators which were not deemed to meet quality standards.

Some of this flexibility in learning designer roles was achieved through social negotiation of the kind explored by Whitchurch in discussion of blended professionals (2009). However, the data shows that technology was also leveraged to help progress projects. In contrast to technologically determinist commentary on MOOCs in higher education, the findings in the following section show that outcomes of these projects were not attributable to any ‘fixed’ properties or ‘inevitable’ consequences of particular technologies. Indeed, learning designers at times configured technologies and development processes as a means to defuse tensions and conflicts between those with more clearly defined roles. As the following sections show, learning designers were able to integrate social and technological means to foster positive working relationships whilst maintaining quality controls on course materials produced.

### **Integrating technology into blended professional activity**

Some of the learning designer activities reported above align well with many of Whitchurch’s dimensions of blended professional activity in MOOC development. Indeed, the data shows how negotiation or redefinition of roles (spaces) occurs, whilst professional and academic knowledge is integrated in decisions on course content (knowledges). Learning designers also work hard to establish their credibility (legitimacies) in the space and forge new, and effective networks (relationships). However, explorations of these dimensions of activity have previously focused on how social constructions of identities and roles emerge in third space projects, without considering the role of technology in this space.

The data shows that learning designers were able to leverage both social and technological means to shape their roles and those of others in MOOC development. Learning designers configured access to the platform, made decisions on course content and presentation, and integrated technologies into processes of course production, oversight and control (see Table 2) as they navigated “the ambiguities of third space between professional and academic domains” (Whitchurch, 2009). The STIN analysis has helped to show how these activities involved negotiation with a range of social actors on the one hand, but leveraged the enabling and constraining effects of technology as it is actively configured and embedded into particular social contexts on the other (Kling et al., 2005).



Table 2: Technology-related decisions as part of blended professional dimensions of activity (adapted from Whitchurch, 2009, p.410)

<b>Technology-related decision-making by learning designers in MOOC development</b>	<b>Specific third space action</b>	<b>Dimension of blended professional activity</b>
Configure access to the platform	Redefine / modify professional space and boundaries	Spaces
Determine types of learning activities used	Achieve credibility in academic space / debate	Legitimacies
Make decisions on content of videos / learning activities	Embed and integrate professional and academic knowledge	Knowledges
Create protocols for submission/acceptance of images agreed by educators, legal and marketing	Offer multiple understandings of the institution Form alliances with key partners	Spaces Relationships

### **Gaining a ‘final say’ over MOOC development: From co-creation to subtle control**

The theme of learning designer as hub was repeatedly identified across the cases in accounts of MOOC development processes, with interview participants depicting learning designers as the “fulcrum” (Uni A), “linchpin” (Uni B), or “the centre of things” (Uni C). In managing the competing incentives and pressures involved in embedding MOOC initiatives into existing university structures, learning designers “carve out a socio-technical third space which gives them an [unspoken] ‘final say’ over many aspects of MOOC development” (White, 2019, p.151). For example, as the complex nature, extensive scale and perceived risks associated with MOOC development projects became evident, one learning designer reported realizing that important decisions on course structure or content “are going to have to go through me”. Learning designers frequently noted having to “edit [educators’ course contributions] pretty hard” (learning designer, University B) to make them fit the institutional or technological demands of the particular context. Obtaining a degree of unspoken “final say” (University B) or even the “final decision” (University A, C) over projects was seen as important to the practical success of MOOC development:

“This project works best when a small, nimble team makes bold decisions. And just gets on with it” (Manager, University A).

Perhaps surprisingly, this significant transfer of control over some aspects of course development from educators to learning designers was not accompanied by intense conflict or resistance between those parties. Initial conflicts (in the contestation phase of development) mainly arose where conventional institutional roles and structures pitted academic freedom against sharply defined legal or marketing rules of the institution or MOOC platform provider. However, by shaping development processes using the seemingly more ‘neutral’ filter of technological arrangements or configurations, it was possible for learning designers to defuse tensions and reduce the potential for direct conflict between those in more clearly defined roles. For example, learning designers at both University A and B made a “conscious decision to limit educator access to the platform” as a way of mediating between “entrenched” positions of professionals and educators involved in conflicts over acceptable content (learning designer, University B). These are choices made by learning designers, not inevitable consequences of the technologies used.

Furthermore, the complexity of projects, tight deadlines and educators’ existing heavy workloads often meant that educators were prepared to cede control over some aspects of course production. This release of control occurred in a more ambiguously defined third space where educators perceived that learning designers “knew what they were doing and we didn’t” (educator, University A). In contrast to conventional higher education course development activities in which educators are “both creator and deliverer”, they were prepared to accept involvement on MOOCs in which learning designers “very much managed the projects” (educator, University A).

### **Discussion: Understanding learning designer activity within a socio-technical third space**

This section highlights the significance of the findings, particularly the value of conceptualizing activity within a socio-technical third space.

#### **Learning designers as hubs in a network of human and non-human actors**

Although the online learning literature frequently highlights collaboration and teamwork as fundamental in course development, the STIN analysis reveals the role of learning designer as hub within a complex, dynamic network of social actors and non-human actants (see Figure 1). This is unsurprising given the broader body of work on the interaction of technology and social context in the Social Informatics literature, but provides a challenge to conceptions of relatively well-defined team roles in the literature on online learning development (Caplan, 2008). Further, the findings build on studies

which previously focused only on learning designer and educator roles in online course development (Keppell, 2007; Cowie and Nichols, 2010). Use of the STIN strategy allows a wider scope and in doing so identifies the significance of seemingly peripheral actors (Eschenfelder and Chase, 2002) such as marketing or legal professionals in online course development activity.

In identifying these complex networks underlying course development through in-depth case studies at three separate institutions, this study adds valuable nuance to understandings of MOOC development processes and roles. The findings help explain the reactions of educators in Zheng et al.'s research, who find working on MOOCs challenging (2016). STIN analysis identifies the range of actors, incentives and pressures involved within institutional contexts in which massive, open courses do not easily 'fit' (Siemens, 2008). Indeed educators in Zheng et al. report that teaching on MOOCs is "totally different from teaching regular college classes" due to the novel, complex and opaque development processes, and the need for some kind of "project manager" (2016, p.216-7). Cowie and Nichols (2010) have already identified a shift in HE course development roles from individualistic (in face-to-face course development) to more collaborative ones (in conventional online courses) but this study marks a further move toward learning designer control from this hub-like position. In doing so, it elaborates on Najafi et al.'s single institution study of MOOC development, which limited its comment in this area to highlighting the need for a "team effort" in which learning designers are "important" (Najafi et al., 2015).

### **Learning designers as blended professional hubs**

Alongside the complex network of interactions identified by the STIN strategy, empirically grounded concepts from Whitchurch's work on third space add depth to this study of roles in MOOC development. This follows previous work in STIN in integrating relevant social theory into analyses (Kling et al., 2003). MOOCs are distinct from conventional online learning projects in important ways, but they certainly align with Whitchurch's depiction of third space activities as "broadly based, extended projects across the university, which are no longer containable within firm boundaries" (2013, p.25). Learning designer activities in this study were widely perceived to encompass "new portfolios of activity" (2013, p.25), in line with Bisset's analysis of (non-MOOC) 'Educational Designers' in an Australian HE context (2018). In contrast to Bisset, this study further tests third space concepts of blended professionals and applies them to the novel context of MOOCs.

Within this third space, learning designers fit the category of blended professionals well, perhaps because the MOOCs they work on fail to fit conventional university structures

(Siemens, 2008, Daniel, 2014). In responding to this lack of fit, learning designers use their distinctive, institution-spanning perspective on the diverse priorities and perspectives at work across universities previously identified in the literature on online learning (Campbell et al., 2009). However, learning designers take and indeed create a great degree of control in MOOC development in order to accommodate the priorities of a wide range of actors on courses which are associated with potential for substantial reputational enhancement and reputational risk for both institutions and individuals involved (White and White, 2016; Leon-Urrutia et al., 2018).

The findings have shown how learning designers carve out their own role and those of others, often outside of formal definitions of roles and organizational structures. The concept of third space has been useful in illuminating this process, where previous studies focusing on educator perspectives on course development have simply highlighted “fights”, “vague guidelines” and struggles over control of MOOCs (Zheng et al., 2016). Using STIN and the third space lens allows researchers to identify the “invisible systems and actors” which Zheng et al.’s study posit but do not interrogate. Depictions of vague roles and invisible systems echo earlier studies of learning technologists, who were seen to undertake “hidden negotiation” in a role which was “hybrid, marginal, yet central to institutional processes and change” (Oliver, 2002, p. 246). However, this study extends understandings of these hybrid roles of learning designers, moving from Oliver’s conception of a border-crossing academic “tribe” (2012, p.222) to a focus on blended professional hubs of activity who construct their own roles and activities and those of others in active but at times subtle ways.

### **Blending the technological and the social**

Though Whitchurch’s work already suggests those working in online learning occupy the third space, researchers have yet to look at the significance of technology in this third space. Application of empirically grounded concepts of third space allows investigation of the ‘invisible’ systems and ‘hidden’ negotiations which characterize MOOC development, but integrating these ideas with findings from the STIN strategy allows consideration of the role of technology in this space. The analysis highlights how learning designers (as blended professional hubs) are able to substantially direct educators’ course development activities in MOOCs, in a distinctive way to more individualistic or collaborative processes which characterized face-to-face or conventional online course development (Cowie and Nichols, 2010). The learning designer role in MOOC development goes further than the “bridging” (Cowie and Nichols, 2010) or “brokering” (Keppell, 2007) function identified in studies of interactions between learning designers and educators. Indeed, learning designers use technologies themselves as part of the dimensions of their blended professional activity.

Learning designers incorporate technologies into the blended professional spaces, knowledges, legitimacies and networks with which they work, often finding subtle ways to control the development process in pursuit of educational, strategic or practical goals. The STIN analysis highlights system choice points in the third space which are often not fixed or determined by MOOC platform software (as shown in the different local forms of learning designer as hub models that arise in each case). Instead, MOOC production reflects the way individuals “make sense of [technologies], work them into our social practice and through doing so remake them” (Oliver, 2002, p.410).

The study of course has limitations and does not aim to directly compare learning designer and educator roles in MOOCs and conventional online courses, so cannot claim to generalize widely from this case across all online learning contexts. However, the concepts on which the study draws are grounded in considerable empirical research, and the data collected were appropriately ‘thick’ to serve the research aims.

Further limitations of the study lie in the fluidity of the research domain. MOOCs have changed rapidly over the course of the study, as have the nature of the internal and external factors affecting dynamic third space environments in higher education. However, the aim of the research was not to predict or advocate for a particular design of MOOC or course development structure. Rather, the key contribution relates to the integration of a socio-technical perspective (STIN) with insights from the empirically grounded concept of third space in higher education.

## **Conclusion**

This study investigates the role of technology in the third space, focusing on those involved with MOOCs as a novel form of online learning which does not fit neatly into the conventional functions of universities. The study responds to a socio-technical ‘blind spot’ in research into the third space in HE, which highlights online learning as an important area of third space activity in HE, yet does not take account of technology itself. In contrast to hyperbolic accounts of MOOCs causing system-wide disruption of higher education, a more nuanced depiction of the embedding of technology in its social context has been produced.

Across the cases, learning designers operate as hubs in MOOC development, but gain this hub-like position by drawing on third space dimensions of blended professional activity through both social and technical means. Control of MOOC projects is often associated with a lead educator but as these complex MOOC projects mature, a spectrum of internal and external motivations and pressures arise. Conventionally defined educator

and professional roles are ill-suited to such challenges, so to manage this complexity learning designers use their expertise to obtain an unspoken ‘final say’ in course development. This finding echoes previous characterizations in the online learning literature of the learning designer role as subtle, marginal, but core to course development. However, this study reveals that the learning designer role (and those of others) is carved out within what can be seen as a complex ‘socio-technical third space’ constructed by both social interactions and the strategic embedding and configuration of technology.

Integrating concepts of third space and socio-technical perspectives enriches understandings of online course development and the roles of those involved with them. These findings have implications for the recruitment, training and development of staff in roles related to online learning. Individuals could benefit from an appreciation of how both social skills and technologies can be used to “modify professional space and boundaries”, establish credibility, or “manage the duality of ‘belonging’ or ‘not belonging’ to academic space” (Whitchurch, 2010, p.410). Such considerations could be integrated into recruitment procedures or staff training activities as part of case study or problem-based activities. The activities would encourage individuals to challenge assumptions about technologies or roles as fixed or separate from one another. The dimensions of third space activities could also be foregrounded as a new lens by which to understand the networks of people and technologies which are integral to the negotiation, construction and progression of projects.

Further research will investigate the extent to which other online and blended learning projects in HE can be seen to operate in a socio-technical third space.

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