Can learning design be truly collaborative in higher education? Insights from educators and digital learning professionals

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As universities seek to diversify and grow online learner cohorts, effective learning design has become increasingly important. Learning design requires multifunctional, interdisciplinary teams of academic and professional staff to bring together pedagogical, content and technological expertise. Few studies have explored the dynamics of such teams and the nature of their collaboration. This article draws on data from seven qualitative case studies across six universities in the United Kingdom, involving academics collaborating with digital learning professionals to design online learning environments. The study is based on 31 interviews and non-participant observations of design team meetings. Our findings highlight how working relationships and role enactments are contingent on individual dispositions, team composition and structural conditions. Meaningful collaboration emerges not from predefined models but through adaptive relational work that supports trust, openness and knowledge integration. The study offers practical and conceptual implications for educators, teaching teams, digital learning teams, researchers and university leadership.

Implications for practice or policy:

- When establishing an interdisciplinary design team, leaders should assess the core and additional expertise available among members to help configure roles, responsibilities and expectations.
- Universities should support teams in developing a shared understanding of collaboration through structured dialogue and reflective practice.
- Some flexibility in role boundaries allows team members to fill gaps, provide beneficial redundancy, extend their expertise or challenge themselves.
- Generative design teams create an environment of mutual support which enables professional learning.

Keywords: learning design, collaboration, interdisciplinary teams, relational dynamics, online learning, higher education

Introduction

With universities worldwide seeking to extend their reach to more diverse learner cohorts, effective learning design has become increasingly important (Bennett et al., 2017). Collaborative approaches to learning design bring together academic and professional staff in multifunctional, interdisciplinary teams that integrate pedagogical, content and technological expertise (Papageorgiou et al., 2025a; Richardson et al., 2019). Across the sector, organisational models vary in how expertise is distributed and sourced, ranging from internal teams of academics working with digital learning professionals (e.g., learning designers, learning technologists, media producers) to hybrid partnerships with third-party providers and consultants, and, at the far end, fully outsourced arrangements (Walsh et al., 2020). Each model offers universities different options for managing costs, workforce capability and operational efficiency.

Despite the growth of learning design for online learning experiences in higher education, there has been limited research on the nature and effectiveness of collaborative approaches (Richardson et al., 2019; Rotar, 2024). Studies have captured either academic or professional staff experiences, but rarely both.

And while the term *collaboration* is commonly used, descriptions of practice lack sufficient nuance to understand how learning design team members with different roles and expertise engage with one another and what factors affect their performance (Chen & Carliner, 2021). Advancing understanding of how these teams interact within the context of their design work is therefore critical to informing how they can be meaningfully established, motivated and sustained, while also supporting individual and organisational capacity building.

This article presents findings from a larger study that explored the purposeful online learning design practices of educators and digital learning professionals, focusing on the relational dynamics (Papageorgiou, 2022). By examining how academic and professional staff work together, the study contributes new knowledge and draws practical implications to inform scholarship and practice, guided by the following research question: How do educators and digital learning professionals experience team dynamics when they work together to design online learning?

Literature review

Collaborative learning design: Definition and characteristics

A range of terms is used in the literature to describe collective design efforts among stakeholders, such as educators, learning designers, learners and researchers, who contribute their expertise to learning design. Common terms include *collaborative design* (e.g., Kali et al., 2011; Richardson et al., 2019), *participatory design* (e.g., Bratteteig & Wagner, 2016; Cober et al., 2015), *team-based design* (e.g., Burrell et al., 2015) and *co-design* (e.g., Sanders & Stappers, 2008; Wilson et al., 2021). While these terms are sometimes used interchangeably, they reflect nuanced distinctions informed by disciplinary traditions, degree of stakeholder involvement and historical contexts. For example, participatory and co-design typically involve broader stakeholder inclusion and are often applied in large-scale or technical projects. Collaborative learning design does not predefine participants or project scope, making it well suited for this study, which explores learning design work between educators and digital learning professional ecologically, in authentic settings. However, collaboration as a praxis must be critically considered, as it involves implicit assumptions about roles, power and decision-making (Newell & Bain, 2018).

Collaboration is understood as the "joint interaction in the group in all activities that are needed to perform a shared task" (Vangrieken et al., 2015, p. 23) and is widely associated with the co-construction of knowledge through mutual influence, joint effort and negotiation (Newell & Bain, 2018; Stahl et al., 2006). Unlike cooperation, which entails dividing tasks among individuals based on their expertise and subsequently combining the results, collaboration demands deeper engagement through continuous dialogue and shared decision-making. An essential feature of collaborative learning design is the inclusion of all actors' perspectives. As Dillenbourg (1999) has argued, it is not the frequency of interaction but the degree to which interaction shapes collective decisions that defines collaboration.

Scholars have attempted to conceptualise collaborative learning design (Burrell et al., 2015; Luo et al., 2020; Voogt et al., 2015) emphasising collective commitment and communication, the specialised input of all members in achieving shared objectives, the integration of diverse expertise to produce a unified outcome and the co-development of learning materials aligned with contextual intentions and constraints. Taken together, these perspectives suggest three defining features: a co-constructive approach to a shared design activity, interdisciplinary knowledge integration and attentiveness to contextual realities. Drawing from this, collaborative learning design is defined in this study as "two or more people with different expertise, experience, ideas, and skills coming together to collectively design for learning by considering the realities, vision, and characteristics of their context" (Papageorgiou, 2022, p. 65). This conceptualisation positions collaborative learning design as a means of empowering participants to take ownership of design decisions by connecting, expanding, and applying their collective knowledge to drive pedagogical enhancements and innovation (Wilson et al., 2021; Zamenopoulos & Alexiou, 2018).

While much of the literature frames learning design as inherently collaborative, the actual roles and dynamics enacted during design activities can deviate from this ideal. Chen and Carliner's (2021) review reveal that, despite collaboration being a dominant narrative, alternative models include consultation (learning designers as coaches), customer-service (learning designers respond to requests) and administrative. This range of interactions aligns with Little's (1990) earlier typology of educators' professional interdependence (see Table 1).

Table 1
Levels of interdependence in educators' professional interactions (based on Little, 1990)

Storytelling & scanning	Opportunistic, often one-way exchanges where communication with colleagues is limited or sporadic. Design practices in this mode are largely shaped by individual experimentation and driven by a culture of individualism and independence.
Aid & assistance	Purposeful, one-to-one interactions that occur when specific needs arise. In this mode, colleagues maintain respectful boundaries, offering help when invited while avoiding unsolicited involvement.
Sharing	Open exchanges of ideas, opinions, debates and constructive feedback among colleagues as routine praxis. This mode includes the mutual encouragement and the (voluntary) circulation of resources and practices.
Joint work	Shared responsibility and collective decision-making to pursue a single course of action. Co-defining priorities, building shared understanding that in turn guide the choices of individual actors. This mode matches with collaboration.

These differentiated models challenge the assumption of uniform collaboration in learning design and help clarify how it is enacted in practice. This study draws on them to examine interactional and positional dynamics in learning design, addressing an empirical gap that assumes collaboration without interrogating its form or function.

Key actors and their roles

The composition and roles of interdisciplinary actors involved in collaborative learning design for online learning varies across institutions and remains fluid in definition and boundaries (Mitchell et al., 2017; Wilson et al., 2021). Figure 1 illustrates the range of potential contributors engaged in learning design activities.

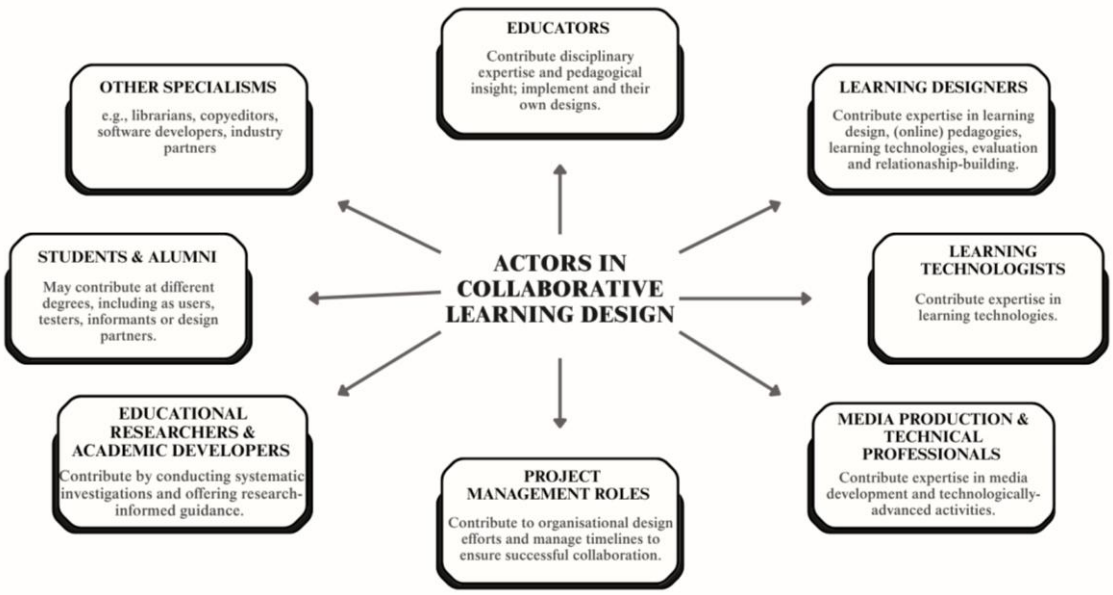

Figure 1. Actors in collaborative learning design

Educators are typically viewed as the core actors, bringing disciplinary, pedagogical and practical expertise, and are the implementers of their learning designs (Voogt et al., 2019). However, their ability to fully engage may be constrained by limited time, competing demands and varying levels of digital fluency. Many rely heavily on tacit knowledge or habitual practices, which may hinder innovation, particularly in online learning contexts where understanding of digital pedagogies, learner needs and technology use is essential (Kilgour et al., 2019). This can lead to a disconnect between pedagogical intentions and effective implementation.

Learning designers have increasingly become central to bridging this gap. They contribute expertise in learning design, digital pedagogies and learning technologies, and bring evidence-based approaches that support innovation and enable the co-creation of pedagogical solutions with educators (Richardson et al., 2019). Drawing on design frameworks and collaborative tools, they help structure design conversations, align learning outcomes and guide iterative design (Papageorgiou et al., 2025a; Stefaniak et al., 2025). Learning designers occupy what Whitchurch (2008) has called the "third space", inhabiting hybrid roles that transcend traditional academic-professional dichotomies (Mitchell et al., 2017). Their roles demand positional agility: the capacity to move across institutional silos, navigate governance structures and respond to varying levels of educator readiness (Stefaniak et al., 2025). In many cases, their work extends into behind-the-scenes tasks, such as managing projects, building collaborative relationships, reconciling competing actor expectations and adapting to institutional constraints (Hart, 2020). Their contributions to strategic institutional initiatives and cultural change position them as change agents supporting institutional capacity building (Burrell et al., 2015; Chen & Carliner, 2021).

Other contributors, such as learners and/or alumni, librarians, educational researchers, academic developers, media producers, project managers and copyeditors, may also be involved, though often in a peripheral capacity (Hixon, 2008; Mitchell et al., 2017). Despite this range of potential contributors, literature has largely defined roles based on job titles or professional assumptions, rather than examining how these roles are enacted in practice. This study addresses that gap by investigating the lived, in-situ experiences of actors engaged in collaborative design for online learning.

Working relationships and dynamics

Strong working relationships characterised by trust, mutual respect and effective communication are foundational to meaningful collaboration in learning design (Richardson et al., 2019; Rotar, 2024). Yet, these relationships are complex, often influenced by disciplinary cultural gaps and unclear role expectations (Chen & Carliner, 2021). Communication breakdowns can stem from differing vocabularies, professional identities, and understandings of learning design in an online learning context. When such divides are not actively bridged, collaboration becomes fragmented rather than integrative (McNeil et al., 2024). Learning designers are still frequently misperceived as offering technical support rather than being pedagogical partners, which can hinder trust-building and marginalise their contributions (Stefaniak & Gilstrap, 2024). Conversely, educators may view collaborative design as a threat to their autonomy, particularly when responsibilities unsettle traditional notions of academic ownership (Hixon, 2008; Richardson et al., 2019).

Collaborative working relationships may also carry hidden labour. Regular meetings, iterative design processes, and continuous feedback loops can increase workloads and introduce time pressures unfamiliar to educators used to working alone (McInnes et al., 2020). Without institutional structures such as time allocation and development funds, individuals and teams risk burnout or superficial consensus (McNeil et al., 2024). This study contributes to existing mostly North American studies (Chen & Carliner, 2021; Rotar, 2024), providing contextually grounded insights on how learning design for online learning experiences is distributed and enacted among educators and digital learning professionals in the United Kingdom.

Methodology

This study adopted a qualitative multiple case study design (Yin, 2018). Data were gathered from seven interdisciplinary design teams based at six universities in the United Kingdom: five research-intensive and one teaching-focused. At the time of the study, these universities were either initiating or had only recently begun expanding their credit-bearing online programme offerings. Participants were purposively selected based on three criteria: active involvement in interdisciplinary design teams, engagement in credit-bearing online modules, and current participation in the design of online modules to avoid reliance on retrospective accounts.

A total of 17 participants were included: 10 educators and seven digital learning professionals. Emphasis was placed on selecting individuals (within teams) who played a key role in the design process, ensuring richer insights beyond single-point retrospective interviews (as in Bennett et al., 2017), thereby enhancing the literature. The selected design teams were designing online modules that spanned various disciplines, including medicine, business, education, social policy and computing. Each design team comprised novice online educators responsible for teaching the unit they were designing (apart from Case study 2) and digital learning professionals (e.g., learning designers, learning technologists, media producers) (see Table 2). In this study, novice online educators are defined as either new to university-level teaching in any teaching modality or as mid-career or experienced educators with no or very limited prior experience (e.g., 0–1 years) in online teaching and design. In Case studies 3–6, the partnerships involved educators and internal university digital learning professionals, while Case studies 1, 2 and 7 featured a triadic partnership between educators, university digital learning professionals and third-party providers.

This study received formal ethical approval from Imperial College London's Ethics Committee before the commencement of any research activity following British Educational Research Association's Ethical Guidelines (2018). To ensure confidentiality, participants were assigned unique identifiers, and their affiliated institutions were not disclosed.

Table 2
Case studies and participants' characteristics

Case study	Participant role[a]	Experience in on-campus teaching[b]	Experience in online learning design and/or teaching	Online module design team: contextual information
1.	Lead educator Media producer	6–10 years 11–15 years (former educator)	1 year 3 years	Online modules for a postgraduate programme in education. The lead educator and media producer were the primary decision-makers, with input from other academic and digital learning professionals. Collaborated for 1 year.
2.	Lead educator	11–15 years	0–1 years	Online modules for an undergraduate programme in computing. Despite the involvement of both internal digital teams and third-party providers, the lead educator largely worked independently, with minimal input from others over the 3–month design period.
3.	Lead educator	6–10 years	1st time	

Case study	Participant role[a]	Experience in on-campus teaching[b]	Experience in online learning design and/or teaching	Online module design team: contextual information
	Educator Learning designer Learning technologist	6–10 years N/A N/A	1st time 4 years 4 years	Online module in social policy, in a new interdisciplinary postgraduate programme. The four participants were the primary decision-makers. Collaborated for over 8 months.
4.	Lead educator Learning designer	0–5 years N/A	0–1 years 6 years	Modules for a new online postgraduate programme in business. The lead educator and learning designer were the primary decision-makers, with input from other academic and digital learning professionals. Collaborated for 5 months.
5.	Lead educator Learning designer	6–10 years N/A	0–1 years 2 years	Online module as part of a new online postgraduate programme in business. The lead educator and learning designer were the primary decision-makers, with input from other academic and digital learning professionals. Collaborated for 5 months.
6.	Lead educator Educator Learning technologist	11–15 years 0–5 years N/A	0–1 years 0–1 years 10 years	First modules of a new online postgraduate programme in medicine. The lead educator and learning designer were the primary decision-makers, with input from other academic and digital learning professionals. Collaborated for 1 year.
7.	Lead educator Educator Learning designer	0–5 years 0–5 years 6– 10 years (former educator)	1 year 1 year 2–3 years	Suite of four interconnected modules for an online programme in medicine. While three team members participated in the study, other academic and professional staff were involved in decision-making. Collaborated for 1 year.

[a]Role titles and responsibilities among digital learning professionals varied across universities. In general, learning designers focused on pedagogical and learning design processes, learning technologists on the integration of digital technologies for online learning, and media producers on the development of media (e.g.,

video, audio, visuals) for learning and teaching. However, these roles and titles are increasingly fluid, with contested boundaries, as discussed in the Findings and Discussion sections.
[b]Collected for participants with formal teaching experience only.

Data collection and analysis

A total of 31 semi-structured one-to-one interviews were conducted by the first author in two phases over a period of one and a half years. Phase one interviews (mean duration: 33 minutes) took place at the earliest possible stage of the learning design process to capture participants' backgrounds, prior experiences and expectations about team members' roles and to build rapport with the participants. Phase two interviews (mean duration: 66 minutes) were in-depth and conducted when participants had fully developed one (or more) online modules. These interviews sought to explore participants' experiences by eliciting detailed accounts of their design processes, pedagogical approaches, decision-making influences, relational dynamics among participating actors and key insights gained from collaborative design that could inform participants' current or future professional practices. Of the 17 participants, 14 completed both interview phases; three participated in a single combined interview due to preference or work constraints. Interviews conducted before the COVID-19 pandemic took place in-person (n = 12), whereas the remaining interviews were completed remotely via Microsoft Teams during the pandemic (March – November 2020). All interviews were audio-recorded and transcribed for analysis.

Between the two interview phases, non-participant observations of team design meetings were conducted to capture participants' in-the-moment thinking, collaborative processes and relational dynamics that might not surface through interviews alone. The first author observed these meetings as a non-participant, shadowing the teams without intervening, questioning or otherwise influencing participants' behaviours or thinking. These team meeting observations focused specifically on planned learning design for online learning rather than emergency remote teaching.

Thematic analysis (Braun & Clarke, 2006, 2019) was used to examine participants' perspectives and experiences across stages and data sources. Interview and observation transcripts were imported into NVivo 12 to support the analytical process. The analysis followed Braun and Clarke's six-phase approach: data familiarisation, coding, theme development, theme refinement, definition of final themes and report production. An inductive coding strategy was applied at two levels: first, within each case, treating individual cases as standalone studies and second, across cases to synthesise broader insights (Yin, 2018). This iterative process enabled the development of cross-case themes and sub-themes, capturing both shared patterns and unique experiences across design teams.

We acknowledge that we bring our subjectivities to this research. The first author has lived experience as a learning designer, university teacher and researcher, with expertise in learning design, digital education and teacher development. The second author brings over 30 years of experience as a researcher and university teacher specialising in learning design and contributed additional interpretation to this paper.

This article stems from a wider study on learning design practices among educators and digital learning professionals. Here, we present the findings that address the relational dimensions of learning design for online learning, exploring how these were experienced by key actors involved in the design process.

Findings

Before presenting the key themes, an overview of the level of interaction within each design team is offered to provide contextual grounding. Due to the naturalistic, case-driven design of the study, participant numbers and roles varied across teams (see Table 2). Little's (1990) collegial relationship continuum was used to interpret levels of interdependence, from loosely coupled roles to more integrated collaboration. Three distinct patterns emerged from interviews and observation data (see summary Table 3).

In Cases 1, 3 and 7, participants engaged in joint work, characterised by joint decision-making, reciprocal feedback and iterative development. Educators and digital learning professionals collaborated through shared brainstorming and knowledge integration. Cases 4 and 5 showed more role-differentiated interactions. Educators primarily consulted digital learning professionals as advisers or service providers. Although instances of "joint work" occurred, particularly during the creation of new activities, most interactions reflected a hybrid of "sharing" and "joint work", varying by task, educators' needs and design phase. Finally, in Cases 2 and 6 collaboration was almost absent from the working relationship. In Case 6, collaboration occurred only between the two educators, with limited input from digital learning professionals. In both cases, engagement between academic and professional staff was largely consultative, aligning with the "aid and assistance" category, shaped by individual educators' preferences (Case 2) or restricted digital learning professionals' availability (Case 6).

Table 3
Levels of interdependence during design across cases (based on Little, 1990)

Cases	Levels of interdependency during design based on Little (1990)
Cases 1, 3 and 7	Mostly "joint work" and other interaction types depending on educator needs.
Cases 4 and 5	Predominantly "sharing" and instances of "joint work" depending on educator needs and design phase.
Cases 2 and 6	"Sharing" (initial phase) and "aid and assistance" (throughout design).

Perceptions of epistemic roles

Appreciating interdisciplinary expertise and diverse team composition

Overall, a diverse team composition consisting of academic and professional staff with a variety of knowledge, skills and levels of experience was considered supportive for making sound design decisions: "We all came from different traditions. We all had different levels of teaching experience, expertise, research exposure. So, it was quite a good mix" (Lead educator, Case 7). Most participants (apart from those in Case 2) viewed team members as bringing complementary expertise. Educators were seen as contributing content and pedagogical knowledge, while digital learning professionals offered expertise in online pedagogy and technology. This perspective is reflected in the quote below and was evident during design team meetings:

> What I wanted was academics to bring the content knowledge, but what I did not want to do was to overburden them with the fear of the digital space [be]cause some of them are very traditional academics [...] Then, there is the technological knowledge. So, we've got the learning technologists, and I want them to bring that knowledge. Then, we have pedagogy. This is a mixture of me, looking at evidence and the professional services team who specialise in digital learning. I wanted to use the skills that are out there. It needs to be a team effort. (Lead educator, Case 3)

This view on interdisciplinary expertise and team members' positioning was enacted in Cases 1, 3, 4, 5 and 7. It was also highlighted by educator participants (Cases 1, 3 4, and 7) who perceived their work with digital learning professionals and other academic colleagues as the most important factor for their decisions in this new medium:

> What's influenced my decision-making is mostly other people. […] I heavily rely on our learning designers, and by having discussions with them in the design sessions, I've kind of clued into some ideas of how to develop for online. (Educator, Case 7)

As discussed in further detail in Papageorgiou et al. (2025a), several collective learning design processes emerged through shared work between academic and professional staff. Digital learning professionals framed the design inquiry by encouraging breadth-first approaches to design and introducing a variety of digital and analogue knowledge materials (e.g., learning design mapping tools, tangible conversation prompts, colour-coded activity types, modelling materials) to support pedagogically informed decision-

making. Dialectic exchanges between educators and digital learning professionals led to the adaptation or redefinition of teaching practices through creative, team-based framing. Educators contributed insider knowledge about learner characteristics and challenges, grounded in their teaching or past learner experiences, which helped identify key areas for development. Digital learning professionals added insights based on how previous online learners engaged with course elements (e.g., discussion forums, video content), offering more nuanced and informed design choices.

Several participants emphasised project and time management provided by digital learning professionals as essential (Cases 3, 4, 5 and 7). Regular meetings allowed design work to progress at a pace that was manageable for educators who had multiple responsibilities (teaching, research, administration). The design process coordination by digital learning professionals assisted in managing educator expectations, keeping track of the process, and creating action plans in this new and relatively large-scale design activity. This was affirmed by both educators and digital learning professionals and is reflected in the quote below:

> I had no idea going into this. How much work was involved […] I had wildly underestimated the amount of time actually. And [learning designer] was extraordinarily patient, as you could tell and helped me manage the process. (Lead educator, Case 5)

Digital learning professionals' familiarity with the subject area appeared to enhance the quality of exchanges in Cases 1, 3, 5 and 7. In Case 1, the media producer noted that his teaching background made him feel more confident in crossing the boundaries of his role to make pedagogy-related contributions: "I have a teaching background, I've got some understanding of the subject. So, I can have those conversations on more specific and deeper levels". His 12 years of teaching experience and qualification in Education provided both subject insight and pedagogical grounding related to the online module's topics and practices. Participants also discussed subject matter awareness as a practical advantage, especially given time constraints during design, which may impede in-depth knowledge integration among collaborators. For example, in Case 5, the learning designer felt her input would have remained abstract without familiarity with the subject area. In contrast, the lead educator in Case 2 resisted close collaboration, believing digital learning professionals lacked the disciplinary expertise required to offer relevant input: "There are learning designers, but nevertheless, they're not subject experts in computing. So, they do not really know".

Redefining roles

Despite a generally positive perception of participants' interdisciplinary expertise, not all members contributed as anticipated in Cases 1, 2 and 6, leading to a redefinition of roles. In Case 1, the lead educator entered the collaboration with high expectations based on her previous experience of a Learning designer who had left the team. She referred to the learning designer's role as challenging the academic team's thinking and providing evidence-informed and innovative ideas specific to online learning. However, she realised that their allocated learning designer was performing a more administrative role, mostly uploading and formatting content – a shift noted by other members and observed during design meeting:

> My expectation for the learning designer was to be a critical friend, be knowledgeable, up to date with new online pedagogical practices, offer alternatives, question the rationale for why we are doing it […].?I am sorry but that was not there. (Lead educator, Case 1)

The lead educator in the initial interview had described the role of a media producer as having technical knowledge and skills (e.g., platform affordances, media production and aesthetics) and responsible for bringing and implementing creative ideas. However, in the in-depth interview, she shared that the media production team contributed to pedagogic thinking and feedback, filling the gap in the learning designer role:

> I know that this is 'learning designer-ish', but I could talk to [the media producers] about layout, structure, learning tasks, new ways we could do things if the platform is limiting and all these other things because they are so good and they have been fantastic. (Lead educator, Case 1)

Further, both participants in Case 1 commented that the project manager role was not covered sufficiently in their design team. This gap added coordination duties to their workload, affecting decision-making capacity and limiting time for pedagogical reflection.

In Case 2, the lead educator chose to work more independently, engaging minimally with the learning designer and media producer. Citing his advanced technical skills and prior experience with online learning, he preferred to develop additional competencies on his own: "I'd rather just spend the time to figure out how to do it myself and then just do it" (Lead educator, Case 2). He viewed the digital learning team's design processes as overly rigid and labour-intensive, clashing with his preferred ways of working. He also felt that involving multiple stakeholders introduced conflicting input and unnecessary complexity: "Sometimes you can have too many people having opinions … I know exactly what I'm doing, and I don't need you to tell me what I have to do". Despite this, he acknowledged that other colleagues engaged positively with the digital learning team, suggesting that collaboration approaches depend on individual preferences and prior experience. His case highlights how educator autonomy and perceived self-sufficiency can influence participation in collaborative design.

The Case 3 team consisted of two educators, a learning technologist and a learning designer. Although the learning designer and the learning technologist were generally performing tasks aligned with their respective roles (e.g., learning designer focusing more on design and pedagogical contributions and learning technologist on the integration of fit-for-purpose technologies), they shared that they were often shadowing each other's practices and, at times, crossing role boundaries. This allowed them to upskill and explore aspects of the other role, reflecting their interest in developing as more holistic professionals.

Connecting the knowledge nodes

This sub-theme explores how academic and professional staff leveraged connections, both formal and informal, beyond their immediate design teams to inform their design work. These knowledge nodes included departmental colleagues, educational researchers, colleagues within digital learning units, institutional leadership, technical experts, students and external partners. Rather than operating in isolation, participants often engaged in conversations with these broader actors and communities, using insights gained to spark new ideas, refine activities and anticipate implementation challenges. This flow of information across roles, teams, and institutional structures contributed to a more integrated and responsive approach to learning design.

Educators, particularly those in programme leadership roles, sought insights from trusted colleagues within their discipline, across departments and institutional networks. These often informal yet purposeful exchanges provided experiential knowledge to guide design decisions. For instance, one educator described how they "learnt a huge amount talking to people that worked in a very small or quite large online programme ... what had gone wrong or well in other developments of new masters" (Lead educator, Case 3). Educators also consulted middle leaders, external collaborators and alumni when navigating unfamiliar pedagogical or content areas.

Digital learning professionals, especially learning designers, played a vital role in coordinating and circulating insights from diverse actors to the design team. The teams of digital learning professionals within their own organisational units served as spaces for knowledge exchange and collective problem-solving. As one participant noted:

> We have regular meetings, and we discuss lots of different ideas...People give spontaneous ideas ... We talk about challenges and push each other. We're working together very closely to come up with best practices (Learning designer, Case 7).

Positioned across multiple teams and modules, learning designers served as facilitators of consistency and differentiation, ensuring alignment across programme components that individual educators often could not oversee. As one participant explained, "To enable a coherent degree-level design, the learning designers involved in the different modules were having continuous discussions that we were then feeding to academics" (Learning designer, Case 3). Furthermore, learning designers liaised with student user-testers (engaged at the end of the design process in some case studies), educational researchers, technical experts and third-party platform providers, helping to surface blind spots and balance pedagogical, disciplinary and technical considerations. For example, one educator noted:

> They [university UX researchers] do an extensive survey, they get the students' feedback about different modules, and the LDs try to feed us with what they have found from their research. And they are trying to actually, shape our content based on this feedback (Lead educator, Case 4)

In summary, while the nature of these knowledge-sharing activities differed between academic and professional staff, this sub-theme highlights collaboration as a distributed, networked process. These personal, professional and institutional knowledge connections contributed to more cohesive and context-sensitive learning design.

Relational dynamics and power imbalance

Establishing a good working relationship

The quality of working relationships and perceived power imbalance between educators and digital learning professionals shaped collaborative design processes in several cases (Cases 1, 3, 4, 5 and 7). A strong working relationship was widely regarded as essential for generative collaboration and mutual engagement:

> Building that relationship between the academics and the other team members was absolutely vital. Because if you do not have a strong relationship, you won't get the opportunity to learn their content. They['ve] got to be willing to sit down with you and discuss and engage. (Media producer, Case 1)

Openness emerged as a defining feature of effective collaboration. Both participant groups appeared to have an aligned perspective and appreciative stance towards the benefits of being open during collaborative design. The digital learning professionals described the importance of educators' receptiveness to, and respect for, new ideas which allowed them to integrate their perspectives: "They often took those ideas on board quite quickly, especially when they could see that you've got a good reason to suggest that" (Learning designer, Case 7). Openness was equally expected from digital learning professionals. For example, in Case 1, the lead educator praised the media team for offering critiques and suggestions candidly, even when working with an academic team with an established culture:

> They would ask lots of questions, and I would like to think that's because we are open to suggestions … They would come to check with us, we are thinking about this, we have this idea, but they were also importantly open to say 'No' and critiquing what we suggested. (Lead educator, Case 1)

The temporal dimension of the working relationship became evident through the extended data collection period and meeting observations. Participants in Cases 1, 3, 4 and 7 perceived the strength of the working relationship to have grown throughout time. While early stages involved uncertainty, sustained collaboration helped establish trust, shared norms and boundaries, facilitating more effective design decision-making:

> They now know how I can be helpful and what we can do with our relationship to bring the best of both worlds[…]And that takes a lot of pressure off for both sides. We have this expectation, those boundaries. (Learning designer, Case 3)

Providing emotional support

As working relationships between the educators and digital learning professionals developed, emotional support emerged as a benefit of collaboration. While designing online learning was described as 'emotionally charged' by most educator participants, the relationships established through collective design processes helped mitigate this burden. Participants across several cases (Cases 1, 3, 4, 6 and 7) expressed a range of emotions — from initial motivation and excitement to stress, anxiety and vulnerability. Early career academics described feeling overwhelmed by the intensity of the work, with some noting it was unlike anything they had experienced before. In Case 3, for example, educators began with optimism but soon encountered fear, fatigue and frustration. These emotions were openly shared in team meetings, suggesting growing trust and psychological safety. Digital learning professionals played a supportive role, offering reassurance and gently encouraging experimentation. When educators hesitated, such as with peer review activities, colleagues promoted a "just give it a try" mindset that helped ease decision-making as observed in design meetings.

Emotional validation and a sense of shared responsibility also helped temper the pressures of design. In Case 1, the lead educator noted that knowing the design would be collaborative helped reduce anxiety and reframe the task as manageable. However, emotional strain was not entirely eliminated. In Case 7, one early career academic continued to experience stress due to institutional expectations and complex role demands, leading to compromises in her design despite a positive team environment.

Perceived power imbalance

A perceived power imbalance was evident across all cases, though voiced only by digital learning professionals. Power in this context is defined as the agency and capacity that a participating actor has in shaping action and making decisions (Bratteteig & Wagner, 2016). Although the working relationship was mostly characterised as a collaboration or partnership by participants, digital learning professionals often positioned themselves as having a weaker role in actual decision-making:

> We are not the same, we are not certainly the people doing this, we are in a different place. (Learning designer, Case 3)

> There're probably things that I would do differently if I had full control…but ultimately, the modules belong to the faculty in a sense. So, they kind of have the final say. (Learning designer, Case 4)

> I did advise against it, but they were keen. And I think this is the case in so many situations. You can present the pros and cons of a specific approach to someone but then, it's their final decision. (Learning designer, Case 6)

Interviews suggested that educators typically held decision-making power, particularly when moving from ideas' generation to implementation, or in the absence of consensus. Digital learning professionals described the challenge of advocating for alternative approaches while preserving the working relationship:

> The dilemma was on how can we change their mind while also keeping them on side? Because it is not about being right, it is about having people alongside you when you get to the end. If you are right but on your own, then that does not really matter. (Learning technologist, Case 3)

Therefore, digital learning professionals sometimes prioritised relational harmony over asserting pedagogically-sound choices. Notably though, learning technology and media production expertise was primarily held by digital learning professionals, as most educators had limited knowledge and confidence in these areas. In Cases 1, 3, 4, 5 and 7, educators relied on this expertise; as one educator explained: "We are not tech experts, we don't know. So, she gives advice: 'Yes, you could potentially do this, or you can do a poll, or you can use this tool', whatever it may be" (Educator, Case 7).

Discussion

The findings of this study point to participants' appreciation of a diversity of knowledge, skills and experience in their design teams. This reflects the nature of the work as multifunctional, requiring integration of technological, pedagogical and content expertise, together with project management and adherence to institutional practices and policies (Rotar, 2024).

The experiences shared by the study's participants illustrate the benefits of a well-functioning team, which come not only from complementary expertise but also from creating an environment of mutual support which enables professional learning (see also Papageorgiou et al., 2025b). Examples of team collaboration include gap filling, whereby a team member contributes expertise outside of their expected role to address an absence or area of weakness; knowledge sharing, whereby team members with an apparent overlap in expertise work together to learn from each other; and "coaching", whereby more experienced team members provide professional and moral support to those less experienced and encourage them to extend themselves. These observations indicate that teams adapt through interactions to complement and support one another, demonstrating the fluid and negotiated nature of professional identities in practice. Without such adaptations, teams may have been hampered by gaps, duplication or reduced motivation. Instead, these dynamics open up opportunities for capacity building.

The findings also highlight the flows of knowledge into and from the design team. For our participants this occurred in multiple ways – through casual mentions between academic colleagues that shared new ways of working to collegial sharing amongst learning designers. These examples highlight knowledge being brought into an interdisciplinary team from exchanges and discussions, as well as sharing of design knowledge beyond the team which may transfer to other current and future work. There are benefits for the team members who share contextually relevant knowledge and for recipients who can integrate new knowledge to expand their pedagogical repertoires. Design knowledge is created through iterations amongst the design team as ideas are considered and tested for their applicability. These acts of boundary-crossing (Akkerman & Bakker, 2011) can contribute to more coherent and innovative design decision-making. In particular, the learning designers' role as boundary-crossers highlights the need for institutional acknowledgment of their multifaceted contributions, as well as strategic recruitment of professionals with advanced interpersonal competencies, especially in brokering and consensus-building.

Team interactions in this study were also underpinned by inherent power dynamics. The power differential between educators and digital learning professionals in universities has long been acknowledged (e.g., Chen & Carliner, 2021; Richardson et al., 2019) and was evident in the experiences shared by participants. These dynamics were raised only by professional staff, pointing to the one-sided impact of being on the "wrong" side of the power imbalance. This does not necessarily imply that educators are unaware of the power they wield; rather, that they did not share any adverse consequences. In the case of learning design practice, the power imbalance in the interactions described reflects not only the longstanding culture of university hierarchies, but also the balance of responsibilities between academic and digital learning professional staff team members. In our study, it was the lead educator who was principally responsible for the academic quality of the outcome of the design process. They would ultimately be responsible to their students, their teaching teams and their colleagues for the success, or otherwise, of the design and its implementation. An awareness of these differing accountabilities may help learning design teams navigate some of the potential tensions.

There are practical implications for these findings relating to team dynamics. In practice, it is rarely feasible to create an ideal team, highlighting the importance of being open to the kinds of adaptations shared by participants in this study. When establishing the interdisciplinary team, there could be a deliberate initial assessment of the core and additional expertise available amongst team members. Proactive leadership to address any limitations in the team is critical, and an awareness of roles and responsibilities across the team will also be advantageous.

Findings from this study also suggest that role boundaries amongst team members present a "Goldilocks" challenge, with the preferred state being neither too rigid nor too loose. Role clarity will help to manage expectations about the division of labour, responsibilities and authority (Chen & Carliner, 2021). However, if role boundaries are held too rigidly observed or jealously guarded, there will not be sufficient flexibility for team members to fill gaps, provide beneficial redundancy, extend their expertise or challenge themselves. If team members operate in silos, their work ceases to be a joint effort and shifts to cooperation at best. While a satisfactory outcome may be achieved, the opportunity to build individual and institutional capacity has been missed. Team boundaries also benefit from being somewhat porous to allow flows of knowledge into and from projects drive professional learning and growth.

Lastly, collaboration was interpreted and practiced inconsistently across the cases, often falling short of the key characteristics identified in the literature. Instead, several teams engaged in varied relational modes throughout the design process with only a few of them demonstrating collaboration qualities throughout the process. These inconsistencies highlight the need for both individual actors and institutions to critically reflect on their assumptions about collaborative work. University leadership and academic and digital learning teams could clearly define expectations of collaboration and articulate its value. When alternative working relationships are more appropriate, these expectations could be explicitly communicated to ensure alignment with local needs and capacities.

These findings should be considered in relation to the study's limitations. This qualitative research was detailed and necessarily involved a relatively small participant sample. The focus was on design teams that included educators with limited experience in design for online learning and are not representative of all interdisciplinary teams engaging in learning design work. In this study, academics were designing for their own teaching and were directly involved in implementation. While this is common in universities, other approaches exist in which design and implementation are separate. Institutional differences in resources, academic workload policies, staff roles, and organisational structures will also shape collaborative practices and outcomes.

The findings and limitations point to directions for future research. Naturalistic studies could explore variation in team composition and a broader range of roles and experience levels to support a deeper understanding of team dynamics. Longitudinal research could examine how engagement and collaboration evolve over time, and how knowledge circulates within teams and beyond individual projects. Finally, intervention studies could seek to explore the impact of leadership strategies to build and maintain generative team interactions based on the successful adaptations identified in this study.

Conclusion

This research contributes to a more critical and situated understanding of the relational dynamics that shape learning design practices within the context of online learning. By foregrounding the in-situ experiences of educators and digital learning professionals, it problematises the notion of collaboration, showing that it can emerge through evolving relationships, responsive role negotiation and shared sense-making. While collaboration is widely promoted in institutional discourse, it is neither uniformly enacted nor experienced. Participants engaged in complex boundary work across intellectual, emotional and organisational dimensions to bring diverse knowledge into coherent pedagogical practice. When adequately supported, these interactions offer rich opportunities for professional growth and innovation. However, the study also surfaced power asymmetries and role tensions that limited fuller engagement. Institutions must move beyond structural arrangements and invest in developing cultures of practice that prioritise trust, reciprocity, and reflexivity. Without such commitment, collaboration is unlikely to realise the pedagogical and institutional value often attributed to it.

Author contributions

Vasiliki Papageorgiou: Conceptualisation, Methodology, Investigation, Data curation, Data analysis, Visualisations, Writing – original draft, Writing – review and editing, Funding acquisition; **Sue Bennett:** Data interpretation, Writing – original draft, Writing – review and editing.

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