Briefing Paper

The Co-Evolution of Pedagogy and Learning Spaces for a Better Student Experience

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SUMS is a membership-based higher education consultancy, a registered charity and not-for-profit organisation that provides expert consulting to universities across all professional service areas.

In this paper, SUMS Academic Partner Hiral Patel, Lecturer in the Welsh School of Architecture at Cardiff University shares initial research and the resulting tool from a pilot project on aligning learning with the space in which it takes place.

Considering that higher education institutions' core aim is learning, you might expect a strong body of knowledge on the relationship between learning and learning spaces. However, that is not the case. There have been many calls to develop our understanding of interactions between learning activities and learning spaces, as well as building capabilities to achieve an alignment between learning and space. Within this context, we developed and distributed the aligning learning and space survey to map the current state of skills, capabilities, resources, and processes within HEIs. The aim was to understand how to align curriculum and learning activities with physical spaces. While there was a limited response rate, the results from the survey do offer insights into a few key themes. To address some of the themes, we have created the Learning-Space Aligner Tool. It creates a forum for reflecting on existing curriculum design, visioning future learning strategies, and engaging with physical spaces actively. The tool can be used for briefing new learning spaces as well as evaluating the fit of existing spaces for evolving curriculum. The tool aims to provide a first step in creating an action plan for change.
A Long-Standing Challenge for the HE Sector

What is the purpose of the university estate? Learning is the first and foremost answer that comes to mind. Learning, particularly learning through life, is becoming increasingly critical in the context of the fourth industrial revolution. Professor Stuart Russell emphasised the importance of education in his 2021 Reith Lectures on living with Artificial Intelligence. Those in the workplace are discovering that, after working from home during the Covid-19 pandemic, the key role of offices is to promote organisational culture and to learn from colleagues (Katsikakis et al. 2020).

Considering that a university’s core aim is to deliver learning, you might expect a strong body of knowledge on the relationship between learning and learning spaces. However, that is not the case. There have been many calls to develop our understanding of interactions between learning activities and learning spaces, as well as building capabilities to achieve an alignment between learning and space. Temple and Fillippakou (2007) conducted an in-depth review of learning spaces. They found that the interactions between learning activities and learning spaces within the higher education sector are not well understood. In addition, it is not just the design of learning spaces, but also the ongoing maintenance of learning spaces that matters. Temple (2008) said that:

"... connection between day-to-day premises maintenance and learning may need to be drawn to the attention of institutional managements. It seems that small things may make a big difference to learning, rather than, necessarily, grand architectural statements".

A decade and a half later, in the context of the Covid-19 pandemic, Taylor (2021) re-emphasised the need for architectural interventions based on an integrative approach that linked learning spaces and teaching/learning styles. Taylor urges us to maximise the use of existing estates and I would argue that to do so, we need to have mechanisms in place to achieve continuous alignment between learning and spaces.

The Current State of Play

In the context of the challenges above, we wanted to know more about how decision-making around curriculum and space is currently aligned. We developed and distributed the aligning learning and space survey to map the current state of skills, capabilities, resources, and processes within HEIs. The aim was to understand how to align curriculum and learning activities with physical spaces. The survey questions focused on how alignment is achieved at different stages of curriculum development, as well as during new building and refurbishment projects.

The survey was part of an ongoing programme of research on the future learning environments and was funded through ESRC Impact Accelerator Project at Cardiff University which involved my secondment to SUMS Consulting. Project partners included the Association of University Directors of Estate (AUDE). We felt it was essential to hear from both estates professionals, as well as education developers, and academic/teaching staff. The survey was sent to AUDE members, selected members of the Heads of Education Development Group (HEDG) and the Staff and Educational Development Association (SEDA JISCMAIL) group. The survey was open from September to December 2021.
There was a limited response rate, however, our sample included 10 higher education institutions from a range of mission groups across the UK, along with one European institution. Seven respondents had a role in education development, while two respondents were estates staff. While this is not a statistically representative survey, it does offers insights into a few key themes.

The following findings emerged from the survey (the unit = number of respondents):

1. Staff with capabilities for aligning learning and space are not organisationally co-located. They are dispersed within an institution and need to be brought together.

   ![Bar chart showing distribution of capabilities for aligning curriculum and physical learning spaces](chart1)

   - **Education Development Unit**: 4
   - **Estate Department**: 3
   - **Academic Department/School/Unit**: 2
   - **Education Development Unit (focus on online delivery)**: 1
   - **Professional Services**: 1
   - **Human Resources Department**: 1
   - **Committees - Interdepartmental**: 0

2. The staff with capabilities to jointly address academic practice and learning spaces are not present either in the estate departments or education development units.

   ![Bar chart showing distribution of academic space-related staff](chart2)

   - **Are there physical learning space-related staff within your institution’s education development unit?**
     - Yes: 4
     - No: 3
     - Don’t know: 1

   ![Bar chart showing distribution of academic space-related staff](chart3)

   - **Are there academic/teaching practice-related staff within your institution’s estates department?**
     - Yes: 8
     - No: 2
     - Don’t know: 0
3. While there is some provision of training and resources to align the curriculum and space for academic staff, such provision for estates staff is significantly less.

![Number of respondents that confirmed provision for training and resources for academic and estates staff]

4. Curriculums and academic practices are constantly evolving. However, consideration of alignment between curriculum and space during curriculum review stages is minimal – and alignment is not considered in all building projects.

![Number of respondents that confirmed consideration for the alignment of learning spaces at different stages of building projects and curriculum development]

**A Potential Solution: The Learning-Space Aligner Tool**

To address some of the above themes, we have created the Learning-Space Aligner Tool. It creates a forum for reflecting on existing curriculum design, visioning future learning strategies, and engaging with physical spaces actively. The tool can be used for briefing new learning spaces as well as evaluating the fit of existing spaces for evolving curriculum. The tool aims to provide a first step in creating an action plan for change.

**The tool allows users to:**

- Engage in discussions driven by learning outcomes and learning activities
- Use service design concepts of journey-mapping and channels
- Apply the tools through workshops with academic staff, professional services staff, and students.
• Apply the tool at either module- or programme-level.
• Apply the tool during annual module/programme reviews as well as in curriculum design exercises.
• Look at learning space holistically and capture both physical and virtual spaces.
• Listen to diverse voices. The tool captures five views of curriculum as shown below:

### Five views of curriculum captured through the tool

<table>
<thead>
<tr>
<th>As prescribed in course handbooks</th>
<th>As enacted by the academic staff</th>
<th>As experienced by students</th>
<th>As experienced by prospective students</th>
<th>As experienced by alumni</th>
</tr>
</thead>
</table>

### Who is this Tool for?

**Estates professionals**
Estates colleagues can use the tool to identify space needs across the campus and inform estates development strategy. It could provide useful evidence for informing business cases as well as evidence for assessment schemes such as [Learning Space Rating System](#).

**Use case:** I am a project manager and I want to identify what kind of learning spaces will be needed when I co-locate three schools on one site. The tool will help identify common pedagogical approaches across the different schools. This will allow me to establish the shared and specialist spaces needed, and to assess the intensity of their demand for timetabling.

**Use case:** I am a project manager and I have initiated a programme of improvements for lecture theatres across the campus. Using the tool with key academic/teaching staff and students will help me understand their experiences in existing lecture theatres. This could inform the principles for the improvement programme.

**Architects involved in building projects**
Taylor (2021) notes that architects have a critical role to play in the briefing process to create healthy and adaptable learning spaces. Reflecting on three university projects, Nicholson (2010) concludes that briefing and design are inextricably interlinked and the success of one depends on the other. The Learning-Space Aligner Tool offers a mode for continually discussing the relationship between learning activities and learning spaces throughout, and after, the project and to adjust as necessary.

**Use case:** I am developing a detailed brief for a new building for a School of Engineering. The tool will help to gather insights into current practices and capture the future teaching/learning vision of the school. The tool could also be used with students to understand how they use different spaces within the existing building.
Education development staff
Jamieson (2003) suggested that academic developers have a key role to play in the design of learning spaces, particularly in setting out project briefs. Academic developers can also achieve key objectives once the building projects are completed:

- First, they can engage with facilities management teams to ensure continuous alignment is achieved between existing learning spaces and the ever-evolving curriculum.
- Second, they can develop capabilities within the teaching staff to sense spatial constraints and provide resources on how they might overcome some, if not all, of those constraints. This becomes particularly vital in the context of blended delivery where those constraints might be overcome through online tools.
- Third, they could gather insights from the ongoing use of learning spaces and inform the development of a programme of building works for their institutions. The key activity in this role would be to gather evidence to inform future design decisions.

Use case: I am education development manager, and I am delivering a blended learning project for the School of Arts Humanities and Social Sciences. I can use the tool alongside curriculum design methodologies to understand spatial and technological implications of the new delivery mode. I can also use the tool to capture students’ experiences and support curriculum co-creation activities.

Academic/teaching staff
Based on his work on dynamic capabilities, Teece (2014) notes that:

“...the strength of a firm’s dynamic capabilities determines the speed and degree to which the firm’s idiosyncratic resources can be aligned and re-aligned consistent with the firm’s strategy”.

Building on the dynamic capabilities framework, Green et al. (2008) noted that enacting strategy is a collective effort that involves individual actors; focusing on the role of the individual is important in enacting strategic visions in practice. The tool aids individuals and teams to identify an action plan to achieve strategic visions for teaching and learning.

Use case: I am a director of teaching and learning for undergraduate programmes in the school. We aim to create a shared first year across different undergraduate programmes in the school. The tool will help me identify the spatial and technological features required to deliver the joint first year. I can use the tool during a staff workshop to capture the desired learning outcomes and learning activities for different modules of the shared first year. I can then identify the implications on learning spaces and learning technology.

Use case: I am Head of student experience for my faculty. The National Student Survey scores for one of our schools are particularly high. I want to gather best practices from that school and share it with other schools. I can use the tool to capture students’ experiences across different modules, and explore how physical spaces, digital technologies and support services are integrated to create an excellent student experience.
**Use case:** I am course director for our BSc programme, and I am planning to create an online/distance learning version of this programme. I can use the tool to compare current face-to-face delivery with how it might be delivered online in the future; the tool will identify the physical spaces and technological requirements needed for the programme.

The tool was piloted at the Department of Computer Science, Cardiff University. The purpose of the pilot was to exchange ideas on the future teaching and learning vision, and how strategic alignment might be achieved with learning spaces. You can find further details of this pilot project [here](#).

A [subsequent event](#) was organised with AUDE to bring together teams of academic and estates staff to review the tool. The event provided useful insights into potential use cases and reaffirmed the existence of challenges that the Learning-Space Aligner Tool is intending to address.

### Understanding and Accessing the Tool

The conceptual basis for this tool is derived from a decade-long research programme. The foundational concept for this tool is to think about a building as a series of socio-material interactions and not as a static object (Patel and Tutt 2018). This allows us to look at the learning experience as a triad between **people** (academic staff, teaching assistants, student support staff, peers, and external stakeholders), **learning environments** (physical and virtual spaces) and **learning activities** (assessments, exercises, lessons).

The idea of continuous alignment between organisational practices and buildings is based on my work on [the DEGW Archive](#). It is evident from DEGW’s work for several multi-national clients that alignment is not a one-off activity, but runs parallel to organisational changes (Patel and Green 2020). The continuous evaluation of a building’s use, based on qualitative and quantitative data, is critical to inform ongoing interventions (for example see this paper on measuring occupancy of buildings - Patel, 2019).

Lessons learned from DEGW’s work also reveal that focusing on experience (a great place to learn) is as important as - if not more important - than efficiency (density and flexibility). This is particularly relevant in the immediate context of blended learning, as well as longer term challenges around the new models of higher education (Patel 2019b).

I am currently co-authoring the [third edition](#) of the book *Managing the Brief for Better Design* with Alastair Blyth, John Worthington and Fiona Young. We are developing the idea of ‘integrative briefing’ which connects different physical scales (chair to the city), organisation and spatial as well as physical and virtual. The integrated approach requires moving beyond a building as a unit of reference and thinking about the campus as an ecosystem of learning spaces that spills into its urban context.

If you would like to discuss your project or would like further information about the tool, please contact SUMS Managing Consultant Claire Taylor at [s.c.taylor@reading.ac.uk](mailto:s.c.taylor@reading.ac.uk).
References


