

LTSHE

Learning and teaching space in higher education



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INTELLECTUAL OUTPUT 1

Exploration of Policy and Practice: Learning and Teaching Space in Higher Education in the United Kingdom

National Report by Birmingham City University about policy and practice of designing L&T spaces in higher education in the United Kingdom including institutional levels

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Executive Summary

Introduction

This report outlines in detail the findings of the research by Birmingham City University for Intellectual Output 1 of the Erasmus+ *Learning and Teaching Spaces in Higher Education* (LTSHE) project. Output 1 is entitled: *Exploration of Policy and Practice: Learning and Teaching Space in Higher Education*. The Output forms an essential theoretical base on which to build the three following intellectual outputs of the LTSHE project.

Intellectual Output 1 of the Erasmus+ LTSHE project aims at identifying national policy and practice relating to the construction and development of learning and teaching space in higher education. Each of the partner countries gathered and analysed data relating to policy and practice at their national level. They reflected on existing literature and thought in the field and its relationship with policy and practice.

In the case of the United Kingdom, our intention was to bring together and reflect upon the growing body of work that has been done on university space and its relationship with higher education policy and practice.

This report is an exploration of the literature regarding learning and teaching space in higher education in the United Kingdom. The report identifies the theoretical background, that is, the academic discussion of this relatively new field of research and discussion. The report then identifies literature at the national level, particularly national policy and strategy regarding learning and teaching spaces, before considering policy, strategy and practice at the institutional level, reflecting on published examples of practice.

There is a growing literature in the UK on learning and teaching spaces in higher education. The interest appears to have grown since the mid-2000s and builds on the work done by Paul Temple and Ourania Fillippakou (2007). Prior to this, interest in higher education spaces and particularly in university buildings has focused more on the architecture for its own sake rather than on the activities that go on within them. This interest reflects the observation by Edwards (2000, p. 37) that the architectural developments of the twentieth century reflected a struggle between ‘place making and the expression of rational, technologically pure architecture’.

The shift from a focus on teaching to learning, which can be identified in the mid-2000s, underpins much of the literature on higher education space and environment. The principle that attention needs to be focused on the student learning experience, rather than on any given lecturer’s talent for lecturing, underpins many of the developments taking place in contemporary higher education in the United Kingdom and arguably ties in with many or all of the other key developments in the literature on

learning and teaching space. The focus on student learning has brought about a shift away from a didactic approach.

In part, this has been part of a wider and growing concern with student engagement, an issue that has been an underlying concern of much of the debate on higher education in the United Kingdom since 2000. Consequently, perhaps, the literature on learning and teaching space is underpinned by concerns about how space can be used to engage students and teachers in higher education. The scholarship on engagement has highlighted many different strands. Ashwin (2015) has warned that engagement has a wide range of different and valid meanings, which range from, at most basic, to access to information to consultation to involvement to participation and partnership; it is important that all of these are taken into account.

This needs to be placed in the context of the implementation of a fees-based funding system in which students have paid an increasing portion of the cost of higher education. Arguably, the implementation of tuition fees explains the increasing focus on the 'student experience' by governments and their increasing concern to ensure that students benefit as a result of paying large fees for their university experience.

The literature generally agrees that learning spaces need to be accessible and inclusive. They need to allow students of all backgrounds to be able to mix and engage with each other. They need to be designed to be inclusive. This fits in with the widespread accessibility and inclusion agenda of successive recent governments and is brought together in the Higher Education and Research Act (2017) (HERA). Access and inclusion is taken to mean students from a wide range of backgrounds: higher education has long been criticized for being the preserve of the middle class and unwelcoming to students from lower socio-economic groups or from minority ethnic groups.

Practically, the digitalisation of higher education, as in other places, has had an immense impact on the sector but it has also had an impact on the way new university buildings are designed and built and how older buildings are modified. There is some focus in the literature on how technology is integrated into university buildings, either at the level of installing white boards in teaching rooms, ensuring that the internet is strong and available in all spaces, through to the development of such spaces known as 'HIVES' (Highly Interactive Virtual Environments).

Theoretical background

In Chapter 2, the report reviews the academic research in the area, picking up particularly on the broad theoretical issues identified that underpin and influence debates about learning and teaching spaces. The chapter explores what has actually been written about learning and teaching space in the United Kingdom and considers the scale of the work so far. The section will also focus on work reflecting on the

relationship between space and learning and teaching. However, the chapter also refers to wider quality assurance/ enhancement debates that underpin the discussion of learning and teaching space.

Methodology

Chapter 3 outlines how the research was conducted and includes challenges. This report is primarily an extended literature review. It reviews the extent of the published and grey literature on space in higher education within the context of the United Kingdom. It identifies and highlights the main themes and issues emerging in this literature. It also places it within the wider context of policy and approaches to higher education in the United Kingdom.

National policy and approaches

Chapter 4 provides information from key policy documents and existing national policy, legislation and practice (including principles) in the United Kingdom. This is vital in order to provide an up-to-date context for Output 4 of the LTSHE project, which will be the Manual of Principles of Design of Learning and Teaching Spaces in Higher Education. The United Kingdom National Report draws on key debates and issues from national policy documentation, academic research articles, practitioner articles and observations from key informants.

National policy documentation is generally accessible but there are several layers. First, there is government policy and its broad principles, described in documents such as White Papers and Parliamentary Acts. Second there is documentation and guidance from various agencies that are given an oversight of aspects of higher education, such as the Office for Students (formerly known as the Higher Education Funding Council England or HEFCE). These develop more detailed advice and/or instructions on the implementation of government policy. The key agencies are the Office for Students, the regulator for higher education in the UK and the Quality Assurance Agency (QAA). Third, there are associations of stakeholders within higher education that provide guidance and share experience. Three key associations engaged with here are UniversitiesUK (formerly the Committee of Vice Chancellors and Principals), AdvanceHE (formerly Higher Education Academy) and Jisc (originally Joint Information Systems Committee).

National legislation and policy documents were analysed to gain insight into the legal framework of the higher education system in the United Kingdom, autonomy of higher education institutions, the position of didactics and pedagogy, digitalisation and the importance of physical space. The research was undertaken always with a focus on (the design and implementation of) learning and teaching space (broadly) in higher education.

Institutional approaches

Chapter 5 discusses the approaches of higher education institutions to the design and implementation of learning and teaching space. In particular, the chapter focuses on strategy driving the design, construction and use of learning and teaching space, on the organisation behind developing new space, on institutional approaches to pedagogy, on institutional digital structures and their influence.

However, institutions also have very practical issues relating to space: first, they need to be sure that they have *enough* space for their students, especially when engaging with the massification agenda – and potentially increasing numbers of students. However many students an institution enrolls, safety is an established concern for institutions in developing their built environment. Ensuring that space is both useful and safe can be a difficult balance to strike.

At the same time, because higher education institutions often own some of the most significant buildings in their community, they must also be conscious of monument protection demands on design and implementation of learning and teaching spaces. Even if they do not own buildings of historic importance, institutions must also be conscious of the aesthetic demands on design and implementation of learning and teaching spaces: how buildings fit into their context is increasingly vital; how they look and feel is important to stakeholder communities.

Institutions are, therefore, engaging with their local communities and as such, their space must be accessible to the wider communities. Accessibility, as we have seen, is a key agenda for contemporary higher education institutions as they attempt to make their programmes and pedagogic practice more accessible to diverse groups of students, which includes being more open and accessible to their neighbouring communities. Being accessible, however, needs to be balanced with asset protection and secure.

1. Introduction

This report outlines in detail the findings of the research by Birmingham City University for Intellectual Output 1 of the Erasmus+ *Learning and Teaching Spaces in Higher Education* (LTSHE) project. Output 1 is entitled: *Exploration of Policy and Practice: Learning and Teaching Space in Higher Education*. The Output forms an essential theoretical base on which to build the three following intellectual outputs of the LTSHE project.

1.1 Aims and objectives of Intellectual Output 1 of the LTSH project

Intellectual Output 1 of the Erasmus+ LTSHE project aims at identifying national policy and practice relating to the construction and development of learning and teaching space in higher education. Each of the partner countries gathered and analysed data relating to policy and practice at their national level. They reflected on existing literature and thought in the field and its relationship with policy and practice.

In the case of the United Kingdom, our intention was to bring together and reflect upon the growing body of work that has been done on university space and its relationship with higher education policy and practice.

Whilst university buildings have long attracted the attention of scholars, particularly architectural historians, this interest has largely been focussed on the architectural merits of such buildings. It is only recently that there has been an interest in the relationship between the buildings and what went on within them.

The seminal work was by Paul Temple in 2008, who wrote an article looking at the literature on the relationship between learning and teaching and the spaces in which they were done. Following this, a number of scholars have contributed to the discussion. In particular, Bligh and Elkington (2019) have focused on the theoretical perspective, whilst a number of other scholars have focused on the practical implications of the relationship.

Much of the current literature tends to present case studies of practice rather than overall views of the impact of new thinking. However, this is hardly surprising since individual institutions maintain their autonomy and, arguably, this autonomy applies to how they develop their environments.

1.2 Why the output is needed in the United Kingdom

The exercise was needed as it brings together the growing body of work on learning and teaching space in higher education. In particular, scholars and practitioners have begun to reflect on the impact of university spaces on learning and teaching and the relationship between them. Temple (2008, p. 238) observed in one of the earliest reflections on the literature on learning and teaching space in higher education:

It is speculatively suggested that certain design features can encourage new ideas and creativity. No evidence is available to support this claim, but further research should be encouraged. Meanwhile, efforts should be made to conduct evaluations of new learning spaces, in order to provide guidance as to the learning benefits, and financial and other costs, associated with them.

Temple's early work (2007, 2008,) highlighted the situation in UK universities and since then, huge changes have occurred in the sector in this country. The last decade has seen a substantial shifts in the way in which university teaching is conceptualised and how universities are funded. Students have become increasingly centre-stage in policy making. In addition, the COVID-19 pandemic has highlighted space issues as university work has been forced to go online. This is clearly a time for reflection on how universities are going to use and design their space in future.

1.3 Challenges and value of conducting Output 1 in the United Kingdom

Exploring the literature on learning and teaching space in the United Kingdom has challenges but it is also rewarding. The key challenge has been that there remains remarkably little accessible information about space. At the same time, there is a growing amount of work on the use of space in higher education and much of the recent work focuses on the relationship between space and learning and teaching. In the case of the United Kingdom, there is a challenge in identifying whether we are able to say anything broad and generalised that is actually new.

However, this output is valuable for number of reasons. It has provided a useful opportunity to reflect on the development of the literature after over a decade of work in the field. It is a useful moment to take stock, unexpectedly, in the light of the COVID-19 pandemic: many, if not most, universities have been forced to switch their activities online, making us question the role and use of our space. It has highlighted that there is a growing body of work in the field and also, seemingly, a compact, self-contained community of researchers actively engaging with the topic.

2. Theoretical issues

This chapter reviews the academic research in the area, picking up particularly on the broad theoretical issues identified that underpin and influence debates about learning and teaching spaces. The chapter explores what has actually been written about learning and teaching space in the United Kingdom and considers the scale of the work so far. The section will also focus on work reflecting on the relationship between space and learning and teaching. However, the chapter also refers to wider quality assurance/ enhancement debates that underpin the discussion of learning and teaching space.

2.1 Scale of the work on learning and teaching space

Academic work on learning and teaching spaces is limited in number and emanates from quite a small and defined community. Interest in space in the possession of higher education institutions has existed for a long time and buildings built by universities have often featured in the general history of architecture in the United Kingdom, mainly because these are often amongst the largest or most significant buildings in the locality. In many cases, the buildings are masterpieces of some of the leading architects of their time (Harris-Huemmert, 2019). However, the focus is usually on the building and its construction rather than the activities that went on inside them – and whether they were designed particularly for purpose. Scholars such as Edwards (2000) have explored the relationship between the architecture and nature of the community using them but not between learning and teaching and space. Even in 2020, Cox et al. (2020, p.1) observe that ‘despite its practical and symbolic importance, the role of space in higher education remains under-researched.’

It has only been with the work of Temple and Fillippakou (2007) that attention has begun to focus the relationship between learning and teaching and the spaces in which it occurs. They observed that this was in contrast to the scholarship of compulsory (school) education, where the relationship between teaching and the environment was well established. Temple (2008) published his seminal article on the issue and others have followed, bringing together scholars and practitioners in the field. Temple’s later edition, *The Physical University: Contours of space and place in higher education*, included contributions from a range of scholars working in this nascent field of study and highlighted a range of different issues relating to university spaces and how they relate to their communities. More recently, Elkington and Bligh (2019) have led a group that explored different ways in which spaces are used by institutions to improve learning and teaching environments in a selected group of higher education institutions.

The LTSHE project has largely been conducted during the period of the Covid-19 pandemic and some comment must be made on the impact, even if only tentatively, of

this on learning and teaching space. In particular, Balbir Barn (2020) has reflected upon UK universities' attempts to implement emergency online teaching in place of face-to-face teaching. Barn argues that until 2020, 'studying the university as a digital enterprise was essentially a futures project' and that 'in responding to this emergency situation, modes of operation have changed.' For Barn, the question is 'how to move from beyond substitution to the extension and breakthrough stages of digitalisation'.

2.2 Research on political debates over higher education and its provision

The existing academic discussion of learning and teaching spaces is firmly placed within the context of contemporary political debates in higher education. In particular, we can identify the influence of student engagement; the shift to thinking about the role of students as partners in higher education; concerns over access, inclusion and equality; and the shift from a publicly-funded system of higher education to one supported by full-cost tuition fees.

Student engagement has been high on the HE agenda in the United Kingdom and more broadly for some time (May and Felsing, 2010). This was highlighted in the 2011 UK Higher Education White Paper 'Students at the Heart of the System' (BIS, 2011), which emphasised student engagement as a key element of the development of learning communities in higher education. Whilst the importance of student engagement in contemporary UK higher education is undeniable, Ashwin and McVitty (2015) argue that it has several different meanings, ranging from provision of information to partnership and consultation. One element of growing interest in student engagement is in 'co-creation' between staff and students in a wide set of institutional activities, a phenomenon emerging particularly in the UK and the US (Bovill and Woolmer, 2019).

Running through all these debates is the continuing concern of access and inclusivity. The challenge of how to achieve a higher level of engagement in higher education amongst people from particular ethnic and socio-economic groups where participation has remained lower. This has been a concern for scholars, practitioners and policy makers for many years and is reflected in the scholarly, practitioner and policy literature. In their work in the area, which focused on curriculum design, Morgan and Houghton (2011b, p. 1) reflected that:

inclusive curriculum design can change the use of space or the type of technology that is required. Involving staff from estates or ICT services can draw on their expertise and help ensure best value in purchases and building projects.

2.3 Engaging with external communities

In their review of the literature on learning spaces, Temple and Fillippakou (2007) highlight the place of university buildings in the city. Although their focus was on the

impact of the city on the university community, it also reflects the wider concern that higher education institutions have responsibilities for engaging with the communities around them, the movement for public engagement (National Co-ordinating Centre for Public Engagement, 2020). The growth in interest in public engagement has implications for how space is designed. Indeed, the National Co-ordinating Centre for Public Engagement (NCCPE) has highlighted spaces that have been used innovatively by universities to run public engagement activities. Cox et al. (2020) have highlighted that university buildings can have class, ethnic and gender implications that must be tackled to make them more inclusive.

The impact of university buildings on the community around them has often been commented upon. Whilst university buildings may be a part of the fabric of the local built environment, new buildings may have a mixed impact on the area. Increasingly, sustainability is important: data collected from the Higher Education Statistical Agency (HESA) from institutional estates offices largely focuses on energy efficiency.

2.4 University organisation

How an institution is managed, how learning and teaching is managed.

Owing to the centralised, top-down nature of authority at many universities, the vice chancellor has a central role. In recent years, scholars have begun to focus on the role of different actors in the development and delivery of learning and teaching. Along with the shift from teaching to learning, the role of the student has become central, although different institutions appear to have had different approaches. The key issue has been engagement (Ashwin, 2015; Klemencic, 2012). It is, however, questionable how far staff and student voices are part of the planning process for new learning and teaching spaces, as can be seen from many exhortations from scholars for the inclusion of all interested stakeholders to be closely involved in the planning and development process.

How all actors are integrated – or not!

There is much talk about higher education institutions being communities, perhaps following in the medieval tradition, implying that all actors are integrated into the life and development of the universities. However, the reality is rather different. There are, of course, many inter-related aspects to this issue, each of which has been the subject of much debate over recent decades: gender, ethnicity, social class and the position of students in the context of tuition fees. All of these issues have an implication for the integration of 'actors'.

Gender is, as many other areas of work, an area of inequality in higher education. Whilst progress appears to have been made, evidence remains of continuing inequalities. Most recently, reports have emerged of the impact of 'working from home': whilst the publication of research papers has increased phenomenally during

the Covid-19 pandemic, the number of papers published by women has significantly reduced (Pinho-Gomes et al., 2021).

Ethnicity is an on-going concern, with lower rates of employment of lecturers from ethnic backgrounds (Adams, 2020). Croxford and Raffe (2014) highlight the continuing inequalities across the countries of the United Kingdom of students from minority ethnic origins and lower socio-economic groups.

Social-class can be an issue, where institutions or indeed higher education as a whole, is not accessible to people from lower socio-economic groups. This can be a result of perception or practicality. There is much evidence of higher education being perceived as a middle-class preserve whilst practically, participation in higher education requires considerable investment by students.

There can be a 'them and us' perception of senior management. This may be increasing as senior management roles have become increasingly professionalised (Whitchurch, 2007). Offices that were once rotational and held for a short period have now become permanent appointments. For example, it was once common for the position of faculty dean to be a three-year role: now in many institutions, it has become an executive post.

The position of students has changed with the introduction of fees. Joanna Williams (2014) highlighted the challenge of viewing students as customers, now that they pay tuition fees. Student partnership is increasingly discussed as being an antidote to the fee-culture. This often appears to omit academic staff, who are presented almost as part of the 'establishment' of academia. At the same time, administrative or 'support' staff appear to be left out of the debate almost entirely.

Influence of teachers over how institutions develop

There is substantial research on the influence of lecturers on aspects of their students' experience. Traditionally, lecturers have had potential to be part of the senior management of universities in the United Kingdom. The vice-chancellor has always been an academic appointment whereas the head of the administration is an administrative officer. Heads of all academic departments are also academic appointments. In principal, therefore, lecturers have the potential to take senior roles. However, the top-down nature of university management in the United Kingdom implies that 'ordinary' lecturers have little influence over the day-to-day development of the institutions. Day-to-day responsibilities include teaching, marking and a certain degree of responsibility for developing programmes, but not, generally, much input into the acknowledged development of the institution. Frequent surveys highlight lecturers' feelings of being left out of university decision-making.

2.5 University pedagogy and curriculum design

This section highlights key issues relating to pedagogy and curriculum design in higher education in the United Kingdom. It is, as Harrop and Turpin (2016) argue, key to understanding learning and teaching space. The section highlights key principles of practice, the shift from a focus on teaching to one on learning. The section highlights the impact of digitalisation in higher education and how pedagogy and digitalisation are blended.

Key principles of pedagogical practice

In the United Kingdom, there has, broadly, been a move away from lecture-based teaching to small group teaching and blended learning. There has been a general move towards socio-constructivism, 'a pedagogic approach that emphasises the impact of communication, collaboration, and negotiation on thinking and learning. Students are actively involved in their own learning which is a process of peer interaction mediated and structured by a tutor' (UCISA, p. 8). This broad movement is characterised by a wide range of different approaches, some of which are based on specific institutional experience and contexts.

This movement has also had an influence on the way campus spaces are perceived. No longer are spaces separated so clearly between teaching and non-teaching zones. Harrop and Turpin (2013, p. 4) base their view of informal learning spaces on the notion that 'learning theory also recognises that learning can take place anywhere' whilst UCISA (2016, p. 8) argues that 'we need to think about entire campuses as learning spaces'.

Shift from teaching focus to learning focus

Overall, there has been a shift in focus in the United Kingdom from teaching to learning. This is highlighted by favouring use of the phrase, from around 2005, 'learning and teaching' in place of 'teaching and learning'. This shift in emphasis has had many implications for practice. Ashwin et al. (2015, p. 161) describes the shift thus: 'we are, through learning outcomes, attempting to move away from a focus on teaching, what we do, to a focus on learning, what the student does'.

Digital structures in universities

Digitalisation has been thrown into sharp focus by the Covid-19 pandemic. Many, if not most classrooms have become virtual as degree programmes have transferred to on-line delivery with lecturers and students engaging with each other through virtual classrooms. Along with issues such as accessibility of technology and the availability of space at home, the transfer to on-line delivery has been challenging. Space, in this context, has become entirely virtual.

However, this shift is part of a much longer trend of what is generally referred to as 'blended learning' (Temple, 2008, p. 236). The debate has focused on the challenges facing universities grappling with technology enhanced learning (TEL) and its impact on the classroom (Dunn and Kennedy, 2019). Space needs to be provided with appropriate technology and rooms depend on suitable technology to work. Lecture theatres and classrooms require suitable computing and internet facilities to enable staff and students to engage with each other: blended learning requires blended environments to facilitate it (Temple, 2008; Milne, 2006). There is always the possibility that space will not keep pace with technological change: Glen and Boehm (2019, p. 61) highlight the challenge:

Placing any new technology into a learning space is almost bound to fail since the space was probably not designed to take advantage of the behaviour enabled by the technology, and the users of the space, both staff and students, may not feel empowered to make changes.

Adams Becker et al. (2017) observe that as universities engage with strategies that incorporate digital elements and accommodate more active learning in the physical classroom, they are rearranging physical environments to promote these pedagogical shifts. Temple (2008, p. 234) noted that 'computer facilities built into the furniture can, especially in quantitative subjects, allow students to work on examples given by the lecturer and obtain instant feedback on their work.' Educational settings are increasingly designed to support project-based interactions with attention to greater mobility, flexibility, and multiple device usage.

At the same time, virtual learning environments, which have developed in many different ways to support student learning, are being constantly re-imagined. The implementation of VLEs can, however, be of mixed success, with a tendency for institutions to use ready-made products such as Blackboard (Heaton-Shrestha et al., 2009). The Joint Information Systems Committee (Jisc) (2016) warns that 'staff can be tempted to simply upload all their existing content, rather than consider how they could use technology to change the design of the curriculum.'

Above all, because the speed and nature of technological change has had an unprecedented effect on the nature of learning, flexibility is vital. As Temple (2008, p. 239) notes, 'future-proofing in space design terms can best be achieved by providing comfortable, pleasant spaces which can be readily used in a variety of ways.'

Planning and creation of physical learning and teaching space – exploring the relationship and blending of the two.

One of the focuses of the existing literature is on the relationship between and blending of the above two elements. Temple (2008, p. 229) argued that 'The connections between the design and use of space in higher education, and the

production of teaching and learning, and of research, are not well understood.’ Since then, there has been limited research that addresses this gap in the knowledge, although scholars still highlight a continued lack of research in the field (Cox et al., 2020). Ironically, it has long been understood that the physical environment can help or hinder learning (Oblinger, 2005).

The study of learning and teaching spaces must, necessarily, combine three basic fields. In their study of informal learning spaces, Harrop and Turpin (2013) have identified these as learning theory, place-making and architecture and argued that each should be considered together. This is sensible, but there is a further element to this relationship which needs consideration: quality management.

3. Methodology

This chapter outlines how the research was conducted in the context of the United Kingdom and includes discussion of the challenges faced. The report is primarily an extended literature review. It reviews the extent of the published and grey literature on space in higher education within the context of the four constituent countries of the United Kingdom. It identifies and highlights the main themes and issues emerging in this literature and also places it within the wider context of policy and approaches to higher education in the United Kingdom as a whole.

3.1 Data

The report identifies the range of literature that is relevant to the issue of learning and teaching space. This covers not only material that is directly relevant to learning and teaching space but also material that has a direct impact on it. Harrop and Turpin (2013) have identified that literature on 'informal learning space design is primarily drawn from three distinct disciplines; namely, learning theory, placemaking and architecture, with few research articles exploring all three disciplines' and this notion has influenced the development of the review.

The structure of the review reflects three levels of focus. The review covers literature at policy and practice at national, sector and institutional level and therefore covers both academic and practitioner work in the field of learning and teaching space. This includes both peer-reviewed articles in learned journals and reports and papers published by practitioner organisations and fora.

The report took account of accessible relevant institutional literature where available and other institutional information about learning and teaching space/ pedagogical practice. The report also uses accessible institutional reports and data where available and relevant. The report highlights particular case studies of practice where available.

3.2 Approaches used to identify data

Data was identified through literature and internet searches. The research did not engage with informants. However, the literature highlights key work undertaken in the field.

Search terms

A wide range of search terms were used in the identification and collection of data. 'Learning and teaching spaces'; 'higher education'; designing; sustainability; digitalization; diversity; massification; safety; monument protection; internationalization; aesthetic; quality assurance; innovative learning; reflective and integrative learning; learning strategies; academic challenge; collaborative learning;

learning community; learning Environments; planning for higher education; campus planning; smart classroom; active learning; students participation, well-being.

3.3 Key influences on the methodology

The methodology used in the development of this report has been pragmatic and exploratory. It is based on the work that has already been undertaken and identifies and highlights key themes and examples of practice that emerge in the literature. The framework of the report and therefore of the research has been developed in discussion with other members of the LTSHE partnership, which in turn has been influenced by discussions with colleagues at the partnership institutions. However, the research for this report has been strongly influenced by existing work in the United Kingdom, particularly undertaken since 2007. In particular, the research has been based on theoretical work by Temple and others, whilst case studies have been built on work led by Elkington and Bligh (2019) and others.

3.4 Nature of the data

The focus is very much on institutional practice and experience; there is a growing academic discussion, building on Temple's (2008) work. This literature is relatively accessible and provides not only reflection upon issues relating to learning and teaching space but also examples of practice.

4. National policy and practice for the design and implementation of L&T space in higher Education in the United Kingdom

This chapter provides information from key policy documents and existing national policy, legislation and practice (including principles) in the United Kingdom. This is vital in order to provide an up-to-date context for Output 4 of the LTSHE project, which will be the Manual of Principles of Design of Learning and Teaching Spaces in Higher Education. The United Kingdom National Report draws on key debates and issues from national policy documentation, academic research articles, practitioner articles and observations from key informants.

National policy documentation is generally accessible but there are several layers. First, there is government policy and its broad principles, described in documents such as White Papers and Parliamentary Acts. Second there is documentation and guidance from various agencies that are given an oversight of aspects of higher education, such as the Office for Students (formerly known as the Higher Education Funding Council England or HEFCE). These develop more detailed advice and/or instructions on the implementation of government policy. The key agencies are the Office for Students, the regulator for higher education in the UK and the Quality Assurance Agency (QAA). Third, there are associations of stakeholders within higher education that provide guidance and share experience. Three key associations engaged with here are UniversitiesUK (formerly the Committee of Vice Chancellors and Principals), AdvanceHE (formerly Higher Education Academy) and Jisc (originally Joint Information Systems Committee).

National legislation and policy documents were analysed to gain insight into the legal framework of the higher education system in the United Kingdom, autonomy of higher education institutions, the position of didactics and pedagogy, digitalisation and the importance of physical space. The research was undertaken always with a focus on (the design and implementation of) learning and teaching space (broadly) in higher education.

4.1 Legal framework of the national higher education system

This section outlines the underlying framework and structure of higher education in the United Kingdom. It provides a brief national and historical context of higher education in the country, the scale of provision and provides an outline of how higher education is arranged.

National context of higher education

There have been several periods of university-building, which has had an impact on the nature of university culture in the United Kingdom and a consequent impact on the built environment in higher education. The first universities were established in the

Middle Ages and the next period of creation was in the early nineteenth century. A substantial growth then occurred in the late nineteenth century with the building of the so-called 'redbricks'. The next significant growth in the number of new institutions occurred in the 1960s, the so called 'plateglass universities', a term popularised by Michael Beloff in 1968. In the 1960s, a new range of institutions, classified as Polytechnics, was established. In the 1990s, the Polytechnics were allowed to take the title of universities, marking the next significant expansion of universities. In the 2000s, there has been further expansion as specialised institutions have been awarded the title of 'university'. Notably, the University of the Arts, London was a group of colleges that was awarded the university title in 2003 (University of the Arts, 2020). The Royal Agricultural University was the United Kingdom's leading agricultural college, established in 1845, until it was awarded university status in 2013 (RAU, 2020).

Number of higher education institutions in the United Kingdom

The higher education sector in the United Kingdom is highly diverse and institutions that provide higher education range widely. The number and type of institutions that provide higher education has grown enormously over recent decades and includes universities, colleges and other providers. In 2021, HESA collected data from 452 higher education providers (HESA, 2021). The use of the term 'university' has been applied to many more institutions. Prior to 2005, universities were required to have a research degree awarding power. Since 2013, ten institutions that provide specialist higher education in arts, agriculture and teacher-training, have been awarded the university title (EU, 2021).

How higher education is arranged across the United Kingdom

England (and Wales) have different rules from Scotland, most markedly in how they are funded. In England and Wales, tuition fees are charged directly from the students and these fund universities. In Scotland, there are no tuition fees. Scottish degree programmes typically run for four years rather than three as in England. The additional year means that graduates receive a masters' degree rather than a bachelors' degree. In addition, the Scottish tradition of providing a broader-based post-compulsory education allows broader degree-level studies with specialisation in the fourth year (NCIHE, 1997).

4.2 Legal prescriptions for and autonomy of the higher education institutions

Access is selective; much is based on exam results; drop-out is comparatively low. Tuition fees were paid by local authorities until 1998 through direct grant. Dwindling public resources led government to reduce their contribution to fees. Since 1998, students have been expected to pay an increasing proportion of their tuition fees.

The system of university funding developed in the 1960s came under pressure in the 1980s and public funding was increasingly restricted and the grant system no longer

supported students adequately. In the early 1990s, the present system of student loans was introduced to replace grants for living expenses; higher-education funding councils were established in each part of the United Kingdom (England, Wales, Scotland, and Northern Ireland) to coordinate state support of higher education. In 1998, tuition fees were introduced and the threshold was raised successively over the course of the 2000s. In 2012, in the interest of further budget reduction, the government raised the maximum level of tuition for higher educational institutions in England to £9,000 per year. In 2016 that limit was raised to £9,250, with plans to allow further increases to keep up with inflation.

Far reaching changes to higher education, focusing it on students and establishing the idea of full cost tuition fees was considered in the government's White Paper, *Students at the Heart of the System* (2011). The stated challenge was to establish a sustainable higher education system that was accessible.

Access and equal opportunity in higher education is a key current agenda in the United Kingdom. The *Higher Education and Research Act* (2017) (HERA) promoted equal opportunity and access to higher education. The Office for Students (OfS), previously the Higher Education Funding Council England (HEFCE), is the agency that oversees higher education in England and is required to have regard to guidance issued to it by the Secretary of State for Education (DfE, 2018).

The position of students in respect of their HE experience and value for money of courses has been given more prominence by government. The National Student Survey (NSS) has run since 2005 and provides the principle source of students' feedback on their experience of higher education in the UK. Although highly controversial, the survey was designed in part as a recognition of the importance of student opinions of their own experience and the use of that feedback as part of institutional continual quality improvement processes. It has also become an established part of the UK's academic system.

4.3 Digitalisation in higher education

This section identifies national policy and practice regarding the use and implementation of online resources for learning and teaching. Digitalisation has become an increasingly important part of higher education in recent decades and huge changes have occurred in the application of online resources. The importance and potential of digital technology in enhancing learning and teaching has been recognised both by government and agencies. The main agency focused on technological development in the UK is Jisc, which noted (2019):

The advent of cloud, Internet of Things (IoT), big data and the like has impacted how we interact with technology as well as the roles that IT staff perform and driven greater integration of technology across university and college

departments. At the same time, HE itself has evolved and institutions must adopt new business models to focus on outcomes, cost-effectiveness and responsiveness to stay competitive.

An integrated approach is clearly central to any strategy of learning and teaching space implementation. Government has a strategy for realising the potential of technology in education, including higher education (Department of Education, 2019). The emphasis of the strategy (DfE, 2019, p. 4) is on integration of technology: 'In the 21st century, it should be seen as an inseparable thread woven throughout the processes of teaching and learning.' The aim of the strategy is 'to help develop and embed technology in a way that cuts workload, fosters efficiencies, removes barriers to education and ultimately drives improvements in educational outcomes' (DfE, 2019, p. 5).

The state and progress of digitalisation in higher education institutions is varied, according to a 2015 survey. This highlighted that universities usually have better internet connection than schools and the importance of user-friendly dashboards for students and staff (Eggers and Bellman, 2015).

4.4 Importance and status of didactics, pedagogy and curriculum design in higher education

In this section, we identify key approaches in the United Kingdom to didactics, pedagogy and curriculum design. The section highlights national policies and approaches. It explores the extent to which 'innovative' learning and teaching practice is encouraged.

The debate on the nature and practice of learning and teaching over recent decades has affected national policy at all levels and this has arguably affected perspectives on the spaces in which learning and teaching takes place. In principle, the government's strategy over the last decade or so has been aimed at improving the student experience of university, primarily of teaching and learning, and attempts have been made to improve the qualifications of university teachers and student engagement with learning.

The *Students at the Heart of the System* White Paper emphasised partnership between students and staff and the notion of the 'learning community': 'to pursue higher education is to belong to a learning community and that the experience will be most enriching when it is based on a partnership between staff and students' (BIS, 2011, p. 33). The QAA requires institutions to engage students:

The provider actively engages students, individually and collectively, in the quality of their educational experience. (p.2)

QAA defines 'academic experience' as encompassing 'the students' experience of studying on their course, and their experience of any other resources, support, facilities and opportunities that the provider makes available to support students' learning'.

A significant recent move towards raising the profile and importance of teaching at universities has been the Teaching Excellence Framework (TEF). Its stated purposes (DfE, 2017, p. 7) were: to better inform 'students' choices about what and where to study'; raise 'esteem for teaching'; recognise and reward 'excellent teaching'; and better meet 'the needs of employers, business, industry and the Professions'. TEF is a national assessment of teaching quality with various awards attached. It is based on three main sources of data – elements of the National Student Survey; data on continuation of studies from year to year and employment outcomes.

4.5 Importance and status of physical L&T space

This section identifies material in the United Kingdom that highlights the importance of physical space to learning and teaching. It also explores documentation that engages with the wider learning and teaching environment. There is a growing amount of documentation that highlights the importance of physical space to learning and teaching.

The development of the Higher Education Design Quality Forum (HEDQF) *Post Occupancy Evaluation* (POE) review guidelines highlights the importance of good building design (HEFCE, AUDE and University of Westminster, 2006, p. 8):

Evaluation and feedback are the cornerstones for the continuous improvement in building procurement sought by the Higher Education sector. Good feedback is an intrinsic part of good briefing and design of buildings. A recent report produced by CABE shows that well-designed buildings are a significant factor in the recruitment of staff and students in Higher Education. To be most effective building performance evaluation must happen throughout the lifecycle of the building. In this guidance the term POE is used as an umbrella term that includes a review of the process of delivering the project as well as a review of the technical and functional performance of the building during occupation. POE is a way of providing feedback throughout a building's lifecycle from initial concept through to occupation. The information from feedback can be used for informing future projects, whether it is on the process of delivery or technical performance of the building.

Jisc (2006) has provided broad guidelines for physical space and its relationship with learning and teaching. The Jisc guidance (Jisc, 2006) is a short, but comprehensive guide for institutions into principles of managing space for learning. Key principles behind this guide are that space should be:

- future-proofed;
- motivational – encouraging students to work; involve learners in the design of new space;
- flexible to accommodate a wide range of learning and teaching needs and changing needs.
- collaborative, encouraging students to work together
- personalisable and inclusive – technology-rich space; technology that is accessible to learners. Designing space to make it accessible to all learners;
- Learner-focused, taking a pedagogy first approach;
- Open for visits from staff;
- vocational teaching space and contain integrated technology.

Jisc (2006, p. 34) guidance states that ‘ there can be no one blueprint for the design of learning and teaching spaces’ and ‘that designs of physical spaces depend as much on the individual institution's vision for learning, its purpose, its learners, and the source and type of funding’.

More recently, UCISA (2016, p. 2) published its own guidelines for the development of learning spaces in order ‘to help members from professional bodies share best practice and work more effectively when creating learning spaces.’ The UCISA toolkit is based on the premise that learning space must be developed within the context of a ‘new pedagogy’ that is effectively a student-centred, constructivist approach to learning. The toolkit goes on to discuss an approach to design:

- That is firmly based on partnership between stakeholders;
- That is carefully planned and managed;
- That is comfortable, flexible and designed to last;
- In which technology is embedded;
- and that is informed by post-occupancy evaluation.

Interestingly, however, the Quality Assurance Agency (QAA) has little directly to say about learning spaces in the Quality Code (QAA, 2016). Space is included as part of the indicators of sound practice in learning and teaching. Specifically, they are included as part of Indicator 8 - Higher education providers make available appropriate learning resources and enable students to develop the skills to use them. (p.18). Integration of the university’s built environment is a concern of several published building strategies: making it possible for students and staff to find their way easily around a campus but also to be engaged with different areas that they might otherwise not visit.

This includes:

the provision and maintenance of adequate computing and library facilities, physical and digital information resources, the range of necessary specialist facilities such as laboratories, workshops, practice rooms, sports facilities, and social learning spaces. (QAA, p.18)

The reference here to 'social learning space' is within a list of specialist facilities. Interestingly, this emphasises the increased focus on learning as a social activity.

5. University strategy and practice for the design and implementation of L&T space in higher Education in the United Kingdom

This chapter discusses the approaches of higher education institutions to the design and implementation of learning and teaching space. In particular, the chapter focuses on strategy driving the design, construction and use of learning and teaching space, on the organisation behind developing new space, on institutional approaches to pedagogy, on institutional digital structures and their influence.

However, institutions also have very practical issues relating to space: first, they need to be sure that they have *enough* space for their students, especially when engaging with the massification agenda – and potentially increasing numbers of students. However many students an institution enrolls, safety is an established concern for institutions in developing their built environment. Ensuring that space is both useful and safe can be a difficult balance to strike.

At the same time, because higher education institutions often own some of the most significant buildings in their community, they must also be conscious of monument protection demands on design and implementation of learning and teaching spaces. Even if they do not own buildings of historic importance, institutions must also be conscious of the aesthetic demands on design and implementation of learning and teaching spaces: how buildings fit into their context is increasingly vital; how they look and feel is important to stakeholder communities.

Institutions are, therefore, engaging with their local communities and as such, their space must be accessible to the wider communities. Accessibility, as we have seen, is a key agenda for contemporary higher education institutions as they attempt to make their programmes and pedagogic practice more accessible to diverse groups of students, which includes being more open and accessible to their neighbouring communities. Being accessible, however, needs to be balanced with asset protection and secure.

5.1 University politics/policy/ strategy

The existing and available data indicates that universities and other higher education providers have hugely varied policies and strategies for the implementation of learning and teaching space. These relate both to national (and international) agendas but also to their geographic and (built) environmental contexts (in the sense of place and the nature of the space they occupy). This section focuses on a number of easily accessible (publicly available) university estates strategies which, although by no means comprehensive, highlight the similarities and the differences between the approaches taken by institutions.

Which documented policy for learning and teaching space do universities in your country have?

Estates strategies, by their nature, are attempts to bring together what might be otherwise disparate projects. Individual projects are often based in different buildings or even campuses and hence, a number of the available strategies refer to connecting and integrating different parts of the respective institution with itself and with its neighbouring communities.

Estates strategies cover all aspects of the built environment of their respective institutions and do not focus solely on classrooms and other teaching rooms. However, there appears to be some overlap between them. There is, as we have seen, little distinction made between social and learning space: the boundaries have begun to break down. The same might be said for other spaces as well. Available institutional estates strategies refer to space as 'place-making' and giving identity to the institution; strategies talk about designing an environment which draws in visitors, students and staff; which encourage them to stop and stay. Strategies are particularly concerned with encouraging partnership between the institution and the local neighbourhood, encouraging interaction with local communities.

The available estates strategies do not appear to have a particular policy or approach to designing learning spaces. As strategies, they are, of course, much broader in the perspectives. For example, Sheffield Hallam University (SHU, 2016) has been quite explicit about this: it states that it 'does not currently have a policy or protocol statement that clarifies how classrooms should be designed or specified to support student-centred interactive and flexible teaching and learning methods.'

Who is engaged?

Case studies of practice throughout the existing literature suggests that there has been a shift from a design and development process that is dominated by vice chancellors and architects towards one that engages a wider group of stakeholders. This is apparent in projects such as those described in *Future Learning Spaces* (Elkington and Bligh, 2019). In this publication, a range of different approaches to engaging stakeholders is apparent.

Powis (2019) refers to the controversy over the use of a 'democratic' or 'consultative' approach in developing the 'Learning Commons' facility at the University of Northampton, which involves a steering group representing a wide range of stakeholders both internal and external.

Similarly, Robertson (2019) explains Abertay's 'sticky campus' as being the result of consultation with all the key stakeholders at the University. Jolly et al. (2019) described an 'action research' process that involved students in creating new library spaces whilst

Oradini et al.(2019) described a wholesale redesign at the University of Westminster that was based on student and staff feedback.

There is evidence that students can be engaged deeply even as part of the design team. According to a BCU (2018) statement, for example, a substantial number of students were involved in the design of the new facilities at the University's new Curzon Building extension:

As part of the [Curzon Extension] project, 3,000 students from the University's Faculty of Computing, Engineering and the Built Environment gained real-life experience of working across the construction industry by putting the theory learned in the classroom into practice. Furthermore, the developers offered 10 paid placements throughout the build, while three graduates are now employed full time by Willmott Dixon [the builder responsible for the construction of the extension] in the Birmingham region.

However, the evidence indicates that university projects are still, however, overseen by a central group, as recommended by the Jisc (2016) guidelines. At Sheffield Hallam University, for example, the design of new buildings and the refurbishment of existing facilities is overseen by a group called the Future Learning Spaces Group (FLSG). Chaired by the Vice Chancellor, the group has 'a particular focus on the quality of the learning spaces.... where there has been a significant move from traditional classroom teacher-centred configurations to more flexible designs that facilitate student-centred approaches to learning' (Sheffield Hallam University, 2016).

5.2 University organisation

This section addresses key questions relating to how institutions organise the development of new learning and teaching space. Harris-Huemmert (2019, p. 25) has highlighted that little research has been published that

to date little empirical evidence has been gathered on how the management or planning of higher education estate is actually conducted. For example, to what extent are the numerous stakeholders – planners, architects, site managers, faculty staff and students, maintenance staff, and university leaders who are ultimately responsible for deciding upon new building projects and/or the demolition or alteration of existing estate – involved and how?

Organisation of the design and implementation of learning and teaching space

As individual, autonomous organisations, higher education institutions in the United Kingdom have authority to organise the design and implementation of learning and teaching space how they wish. Harris-Huemmert (2019) emphasises that estates management has become increasingly professionalized over recent decades in universities in the United Kingdom.

Increasingly, a wide range of stakeholders are involved in the development of learning and teaching spaces. UCISA (2016, p. 17) talks about 'getting the right people at the table' and emphasises the need for a development project to be undertaken at three inter-related levels: strategic, management and practitioner. UCISA (2016, p. 17) states that

the complexity of learning space projects defies the ability of any one perspective to capture all of the necessary requirements and absorb enough information to make informed decisions. A learning space project demands a team approach and that means cross-functional working by academic and support services and the active participation of learners themselves. For many of the stakeholders it will be their first experience of this type of project (indeed a major new build or refurbishment is often a once in a career experience) and every project is unique. Effective engagement with all of these stakeholders is essential to the success of the project.

Which organisational units are engaged, relevant, required?

Scholars such as Marmot (2014, p. 58) have highlighted the leading role given to architects (or, in some cases, 'Starchitects') in designing new space rather than to the wider group of stakeholders, which includes staff and students. In the wider literature of learning and teaching, there has been much discussion of the role of different 'actors', reflecting the move away from a focus on lecture-based education.

Integrating actors can refer to the broader engagement of students and staff in the design of new spaces but it can also imply other concerns as well. Cox et al. (2020) have highlighted the challenge faced by university libraries in making their spaces more accessible and engaging to students from BAME backgrounds.

Much weight has been given to the involvement of actors – especially students - in aspects of their experience such as curriculum design. However, there is evidence that actors are not always or even often engaged in the development of learning and teaching space. User surveys have highlighted examples of students and staff feeling that space has been designed without reference to their actual needs. In response to this concern, some institutions have introduced various projects in which stakeholders have played a much more prominent role in the development of learning spaces.

One particular query is driven by the notion that many individuals with an interest in pedagogical issues have little input into institutional space. This question, which is the focus of this chapter, might be phrased as follows: how can people whose main interest is in pedagogy gain access to institutional discussions of space and effectively make their voice heard? Questions such as this are prominent within the literature, though straightforward solutions remain elusive (Bligh, 2014, p. 34):

The learning spaces literature commonly incites academics, students and others to become more involved in designing and creating spaces within universities. This chapter has conceptualised these people as denizens, a term intended to convey that their insight derives from their experiences inhabiting particular spaces rather than from theoretical or procedural expertise, and to call

attention to their partial enfranchisement vis-à-vis institutional estates processes.

The role of teachers in driving the design of space is a source of debate and experiences appear to vary. Some teachers do not feel that they have been asked about the new spaces they are expected to occupy and use. In other cases, teachers are viewed as a core stakeholder. Temple and Fillippakou (2007, p. 30) observe that 'when university staff members and students are actually asked about the impressive new buildings in which they are working, their responses tend to fall short of ringing endorsements'.

5.3 Cross-cutting themes

Quality assurance of design and implementation of learning and teaching spaces

There are several layers of quality assurance in the design and implementation of learning and teaching spaces. Like any other private person or organisation, institutions planning a new building or the redevelopment of old buildings and sites must apply for planning permission to the local authority. Within the institution, estates departments and relevant committees are involved in the planning and development of new space. The vice chancellor and the institution's governing body will usually need to approve the plan. In addition, stakeholder surveys are increasingly used to gain an opinion of the space and its use. External factors include the QAAs requirement to maintain appropriate and effective resources and facilities. Although not strictly quality assurance, guidance increasingly is available for institutions, as we have seen, from associations such as AUDE, Jisc and AdvanceUK.

Sustainability demands on design and implementation of learning and teaching spaces

Sustainability has become a major issue and institutions appear to be responding with a range of strategies to address this issue. For example, Birmingham City University (2020) recently published its environmental plan and combines a promise that staff and students will be encouraged to act with environmental sensitivity and that the University's buildings will be energy efficient, low-carbon and biodiverse. HESA now regularly collects data on the sustainability of institutions that report to it (HESA, 2020). Estates strategies relating to buildings are underpinned by a concern to make spaces flexible: itself a means of making them more efficient.

Internationalisation demands on design and implementation of learning and teaching spaces

The Universities and Colleges Information Systems Association (UCISA) (2016, p. 12) highlights the need for providing a comfortable and welcoming environment for international students. UCISA highlighted the need for flexibility in the use of space. At Loughborough University, for example, it was found that international students felt more comfortable with tiered lecture theatre-style layouts (UCISA, 2016, p. 42).

Indeed, UCISA (2016, p. 78) also found that international students were less positive in their evaluations about small-group spaces than home students. The available estates strategies do not refer to the particular needs of international students, perhaps because they are necessarily generalised documents. However, the University of Cambridge *Strategic Framework* states that the University must provide the environment in which international students will ‘prosper’ (University of Cambridge, 2016, p. 4). Similarly, the University of Birmingham’s (2016) estates strategy clearly presents the design of space as helping to ‘facilitate the increase in ... international applications’ (p. 4).

Social inclusion demands on design and implementation of learning and teaching spaces

A key theme both in the Jisc (2006) guidance and in most available Estates Strategies is accessibility. Jisc (2006, p. 4) emphasises the need for personalisation and inclusion, referring to the need to ‘welcome and support all types of learners and promote different ways of learning’. All available institutional estates strategies refer to the need to be accessible and inclusive to students from diverse backgrounds.

5.4 University didactics, pedagogy and curriculum design

This section explores institutions’ approaches to didactics, pedagogy and curriculum design. The importance of the relationship between approaches to learning and teaching and the environments in which they are conducted has been identified by much academic literature and the extent to which this is applied at institutional level varies. This section identifies the importance of didactics, pedagogy and curriculum design to institutions, their organisation, and how institutions are preparing for blended learning.

Importance and status of didactics, pedagogy and curriculum development at universities in the United Kingdom

Higher education institutions in the United Kingdom appear to have taken didactics, pedagogy and curriculum development increasingly seriously and they have become a matter of central importance in recent years. As well as appearing as a central feature of strategic plans relating to the student experience, this importance is reflected in the growth in the number and profile of learning and teaching support units within institutions. Such units develop the expertise and highlight the importance of learning and teaching. The key change appears to have been in making pedagogical practice explicit rather than implicit as arguably had previously been the case.

Robertson (2019) stresses the link between an institution’s approach to pedagogy and the spaces within which it operates and highlights the work done by Abertay University to develop a ‘sticky campus’. The sticky campus, as Robertson describes it, is an attempt to provide the students with a learning environment that will encourage them

to stay for longer. This is a particularly important issue for Abertay because many of its students are 'commuting' (that is, are part-time and travel in from home and work) and such students 'are less likely to complete their course, get a good degree and are less engaged in co-curricular aspects of student life.'

The construction of space such as the 'Hive Theatre' at Birmingham City University reflects not only the use of technology but a more democratic, less teacher-focused learning environment. According to the architects, Hoare Lea, the Hive Theatre is a 'unique space' was designed 'to create a seminar space with a greater focus on student collaboration and participation' and 'to deliver more effective collaboration between research, education, and professional practice', using technology but also carefully balanced acoustics (Hoare Lea, no date).

Open and flexible classrooms have long been a feature of new buildings but this now includes specially designed furniture. In the new BCU Curzon buildings, for example, tables are designed with organic shapes to allow closer working together between students rather than simple rectangular tables. The point here being that in the new spaces, the lecturer is not able to be a central figure – students cannot easily sit in rows and simply listen to the lecturer.

The work of Sheffield Hallam University's FLSG is said to support the development of diverse, flexible pedagogies, challenging 'longstanding and inflexible attitudes and assumptions that discourage innovation and hinder the strategic aims of the University and the future goals of our students'. The work of the FLSG is underpinned by the principle that the classroom should reflect Barr and Tagg's (1995) learning paradigm in which the role of the teacher is to engage and challenge students more flexibly (FLSG, 18 April 2016).

Which organisational units, committees, member groups, individual stakeholders are engaged, relevant, required?

When new space is developed, a wide range of people is involved. In principle, teachers and students are engaged more with the development of new space than simply the architects, the University Estates Office and the senior management. However, one of the frequent criticisms from teaching staff is that they do not feel engaged enough in the development of new space: that senior management develop a space and there is little or no consultation. The extent to which the users are really engaged is an area that requires further investigation but there is some work that highlights positive practice.

There is evidence of the use of steering groups to oversee projects that include appropriate stakeholders, such as students and lecturers, as well as those involved in the construction process itself. Powis (2019), for example, argues that a steering group composed of a wide range of stakeholders, including staff, students and

potential external users and visitors, was instrumental in the development of the new 'Learning Commons' at the University of Northampton. In the redevelopment of the Library at Teeside University, Jolly et al. (2019, p. 32) describe a group that was led by the Director of Library and Information Services and 'which involved wide and diverse representation of all key stakeholders, including students, staff with academic roles and staff from estates'.

There is evidence of engagement through consultation with students and lecturers. The phrase 'consultation' however, can cover a range of activity. It can be an extensive 'scoping' phase of development, as described by Robertson (2019), in his study of the development of the 'sticky campus' at Abertay University. Robertson refers to going 'back to first principles in terms of what we were trying to achieve and engaged extensively with identified key stakeholders', that is, students, academics and heads of relevant services. In this case, 'scoping included desk-based work, open-invitation workshops and consultation meetings to identify key areas for development' (Robertson, 2019, p. 26). For Jolly et al. (2019), the key principle in projects such as these is partnership with the students. At all stages, students in particular were involved as partners in the design and development phases of the Library refurbishment at Teeside University.

How are didactics, pedagogy and curriculum development prepared/preparing for blended learning and teaching?

There is some evidence that institutional approaches to linking didactics, pedagogy and curriculum development, blended learning and learning spaces is improving. Powis (2019) observes that the building of the new 'Learning Commons' at the University of Northampton was based on a long-established 'active blended learning' approach to teaching and that this made the development of a new campus more successful. Robertson (2019) notes that the development of learning spaces was the second phase of the teaching and learning strategy at the University of Abertay.

However, the lack of training for academic staff in the use of new space has been highlighted. Marmot, (2014, p. 63) notes that new academic staff are required to undergo training on teaching and learning techniques but this omits attention to the way physical space, furniture and spatial layouts, technology and lighting and atmosphere may affect the overall educational ambience and communication between teachers and students.

5.5 University digital structures

Jisc (2021) considers 'the extent to which the culture and infrastructure of an institution enables and motivates digital practices' and highlights the critical role that digital technologies play in universities' core activities. Concomitantly, institutions are increasingly engaging with the enormous amount of digital data that is being produced

(Shacklock, 2016). Higher education institutions in the United Kingdom are developing models of digital management, although a 2015 survey suggested that institutions here were lagging behind, particularly countries such as the US and Australia (Kane and Williams, 2018; Sclater et al., 2016; Newland et al., 2015). Universities are, as Barn (2020) argues, in the process of 'digitalisation', a transformation where operating models are being overhauled to engage with new realities.

What is the importance and status of digital structures at universities in your country?

The Covid-19 pandemic has, of course, highlighted the importance of digital structures to higher education institutions in the United Kingdom as they have shifted to online learning and teaching. However, they appear to have been placing digital technology at the core of their strategic plans for the last decade. A review of available strategic plans highlights the central place in their strategies for learning and teaching and for managing the increasing amounts of digital data.

The notion that digital technology must be part of a whole institutional approach appears to be gaining currency (Jisc, 2021). For example, the University of Leicester's Strategic Plan (University of Leicester, 2015) presents the notion of the 'digital campus', which 'creat[es] an inclusive, personalised and interactive environment for our students, staff and partners that will also support excellence in research, enterprise and learning.' The plan goes on to state that staff and students will be supported to develop their digital skills to make best use of the opportunities provided by the new technologies. The notion of the 'digital campus' is of particular interest here because it is a notion of a digital environment that parallels the physical environment.

The realisation of such strategies in practice are open to criticism (see the Erasmus+ SQELT project, 2021) and most available case studies tend to highlight only the positive impacts in specific areas of development rather than critique approaches. However, there seems to be a generally positive reaction from stakeholders in some cases. For example, at Teesside University, the development of the new library as 'a more advanced, technology-enabled environment, yet at the same time student friendly' environment, was regarded almost wholly positively (95%) by students (Jolly et al., 2019 p. 36).

Which organisational units, committees, member groups, individual stakeholders are engaged, relevant, required?

Over the course of the last decade, engagement with stakeholders has been a particular cause of concern (Williams and Kane, 2018; Sclater et al., 2016). Neil Sclater's 2014 report highlights that until that point, there were only a relatively few higher education institutions in the United Kingdom that had a developed learning analytics system and until that point, development was largely done by IT services with

input from the libraries. Sclater highlighted examples of institutions that engaged a wider section of stakeholders. Nottingham Trent University, for example, had ‘developed an effective four-way partnership between information services, academics, students and their external software consultants’ (Sclater, 2014, p. 6).

At Leicester, as we have seen above (University of Leicester, 2015), a whole institution approach is taken to developing digital capabilities. This appears now to be not uncommon as institutions engage with the ever-increasing amount of digital data that they collect. At Birmingham City University, for example, an institutional strategy is being developed, based on an accepted wisdom that learning analytics relates to all aspects of the life of learning and teaching at the institution (Williams and Kane, 2018). Digital data collection methods are embedded into new spaces as well as providing students and teachers with technology to use the new spaces.

How are digital structures prepared for blended learning and teaching?

Evidence from the QAA’s 2020 report on the transition to blended learning indicates that higher education institutions in the United Kingdom have managed the transfer to online learning as a result of the Covid-19 pandemic positively. The report focuses on institutions’ ability to provide teaching online rather than on broader understandings of blended learning. However, the report suggests that institutions have generally built infrastructures that support this transition and there are many examples of how technology has increasingly been used and integrated into learning and teaching both during the pandemic and prior to it.

5.6 University physical L&T spaces

In this section, we explore reporting of the extent to which physical learning and teaching spaces are important to higher education institutions; the organisation behind the implementation of spaces. We explore cross-cutting issues relating to massification, safety and security, and accessibility. The section also explores monument protection and asset protection.

Importance and status of physical learning and teaching spaces at universities in United Kingdom

Published case studies indicate that learning and teaching spaces are becoming more important and of a higher status than previously for the combination of reasons highlighted throughout this report. First, Wolff’s (2019) critique suggests it is motivated by the students paying ever-increasing amounts in fees; however, it does highlight the freedom now given to institutions to build what they want. In the context of a need to attract as many fee-paying students as possible in a highly competitive ‘market’, glossy new buildings and attractive spaces are part of every higher education institution’s marketing strategy.

Second, there is certainly evidence that poor scores for learning and teaching in the National Student Survey (NSS) are a driver for change and can affect an institution's approach to the physical space. For example, Oradini et al. (2019) stated that 'a primary driver for [the Learning Futures programme] was concern over NSS outcomes which consistently gave below-sector average scores for learning and teaching at [the University of] Westminster.'

At the same time, such criticisms (third) ignore the huge body of evidence of genuinely motivated attempts to improve the experience of the students. Examples suggest a growing interest in innovative learning and teaching space since the mid 2000s. The Jisc (2006) guide and the UCISA (2016) Toolkit are notable amongst several resources that have provided examples of innovative space that were learner-focused, technologically integrated and flexible. By 2019, the development of spaces such as those highlighted in the edition by Elkington and Bligh (2019) indicate that these themes were still firmly in place.

Which organisational units, committees, member groups, individual stakeholders are engaged, relevant, required for adequate implementation and improvement?

Various groups are involved in the development of new space. Whilst a single group of stakeholders, usually including the vice chancellor, has oversight of all new building projects, the trend has been to involve a wider group of stakeholders in the development of new space. At the very least, it is expected by organisations such as AUDE and UCISA that stakeholders are involved through feedback surveys, but it is also expected that consultation goes much deeper than this.

Student engagement is an essential concern in all other areas of institutional life and so it is for new building projects. At Teeside University, for example, students were involved in the consultation process (Jolly et al., 2019).

Cross-cutting themes

Massification demands on design and implementation of learning and teaching spaces;

The massification of higher education in recent decades has had an impact on the space available for teaching larger groups. First, massification is not just about numbers: it is also about diversifying the student body. How do different groups relate to space? The second point of relevance is that massification has been linked with the introduction of tuition fees (Giannakis and Bullivant, 2016). Growing numbers of fee-paying students may reasonably ask 'what are we getting for our money?'

The noticeable growth in building by universities in the United Kingdom is the direct result, according to *the Guardian* (2016) and Wolff (2019), of the introduction of tuition fees and the massive growth in student numbers as part of the Blair government's strategy for higher education. This has had two main impacts on space.

First, rooms need to be big enough to accommodate larger groups of students. Second, with growth in numbers has come diversification of users with different needs.

Safety demands on design and implementation of learning and teaching spaces

National health and safety regulations apply to all spaces in UK universities. There are limitations to the numbers of people that can be accommodated in any given space. Hence, large lecture theatres may not always be so big to be flexible for larger groups of people. This may have an impact on the size of classes and lectures.

The current (2021) safety demand is, of course, Covid-19 and this has had huge implications for learning and teaching spaces during the pandemic. Universities in the United Kingdom have largely been forced to close for most face-to-face classes and programmes have at best continued online. The impact of this in the longer term is not known, but it may be expected that some significant changes will occur. It may be expected that digitalisation will at a faster rate due to the introduction of technological solutions during the pandemic (Barn, 2020).

Monument protection demands on design and implementation of learning and teaching spaces

For institutions with buildings of historical importance, there are limits on what can be done with them. The challenge is to combine protection with development. How do institutions engage with heritage issues? At the same time, universities often significantly influence the communities in which they are set. Whilst they may be constructing new spaces, they have a responsibility to those communities. New buildings often have an impact on the local built environment, the infrastructure and the local community.

Aesthetic demands on design and implementation of learning and teaching spaces

How a space looks is important. However, aesthetic demands often are in contradiction to the practical needs. Marmot's (2014) reference to 'starchitects' highlights the challenge of designing distinctive and eye-catching new buildings that are not particularly practical. Wolff (2019) highlighted criticisms that architects built rooms where the ceilings were low and obscured visual screens.

Conversely, architecture and the art collections that institutions own can be used strategically. Hards et al. (2014) argue that university art collections are increasingly being used to help strengthen institutional identity and 'placemaking'. They are part of the NCCPHE's view that these can be part of the public engagement strategy.

Accessibility

The issue of how to make learning and teaching spaces accessible, both to attract users and to comply with government requirements, is one that has stimulated much activity

within institutions. Space needs to be designed that is fit for disabled users: mobility and sensory diversity needs to be taken into account. Space requires different features from traditional lecture theatres and classrooms. For several case study institutions discussed in the literature, one of the keys to understanding requirements is to engage key stakeholders in the development process. At the University of South Wales, for example, ‘the TLS steering group began a ‘Big Conversation’ around classroom spaces involving students, staff from academic and support roles, and external space consultants’ (Rowlands and Kell, 2019, p. 52).

Building on such engagement, institutions sometimes redesign their campuses in ways to make them more attractive and encourage their students to stay for longer than they might otherwise do. Robertson (2019, p. 24) uses the notion of the ‘sticky campus’ to create an environment that encourages students to remain on campus:

The sticky campus aims to provide the students with the right kind of environment and learning opportunities that they will want to come and stay. There is good evidence in the academic literature that commuting students are less likely to complete their course, get a good degree and are less engaged in co-curricular aspects of student life

One of the processes that institutions occasionally use to ensure that classes are provided with the right facilities and tools is timetabling. Timetabling has attracted some attention as an important element in the use of innovative elements of higher education practice such as ‘flipped classrooms’ (Lundin et al. 2018). Indeed, as Oude Vrielink et al. (2019, p. 145) recently argued, ‘is essential for the discussion about innovation in ... higher education’.

Asset protection

This covers a range of concerns relating to protecting the university’s environment. It relates to protection from criminal or other damage; to maintaining heritage buildings; to issues relating to inclusion and exclusion.

Universities often own and maintain buildings that are ‘listed’¹ and as such are aware of the additional legal obligations relating to maintaining such buildings. Not only do they have a responsibility to maintain and care for them, they must be careful to maintain them appropriately within legal requirements, which usually includes ensuring that appropriate materials are used in their repair. In addition, there are limits on the uses such buildings can be put to. Birmingham City University owns and maintains a number of buildings that are of importance to the historical development

¹ Listing is the UK’s system for protecting architecturally important buildings. See <https://historicengland.org.uk/listing/what-is-designation/listed-buildings/>

of the city of Birmingham (for example, the Central Art School and the School of Jewellery).

Asset protection also implies ensuring that the institution's built environment is protected from criminal damage. This highlights the importance of effective boundaries between providing protection for buildings and being welcoming and inclusive to students and the wider community. Experience suggests that most, if not all, higher education institutions have secure walls and fences for security; their buildings are generally accessible only by students and staff on presentation of identity cards.

6. Conclusions and recommendations

6.1 Conclusions

The theoretical debate relating to learning and teaching spaces is growing. Space is attracting increasing interest from scholars beyond the confines of an architectural and sociological context. Pedagogy is an increasingly central discussion and its importance to the learning and teaching space is regarded as vital. The role of the Quality Assurance Agency potentially has a large role to play but this has largely been overlooked by authors in the field.

There is a long standing understanding that there can be a tension between architecture and the activities that take place within them. Space may not always reflect the nature of the work going on inside them. In some cases, this is the result of institutions often inhabiting buildings that are of historical interest and therefore protected, making changes difficult. In a lot of cases, though, institutions develop new buildings that are architecturally interesting (for example, by being designed by Marmot's 'starchitects') but of no great use to the users.

Much of the academic research, policy and guidance, therefore, agrees that provision of new space works best when all the key stakeholders are involved from the start of any new development. This involvement varies depending on the development project and this is highlighted in much of the literature. However, partnership appears to be a key issue: users and developers should work in partnership to ensure that the space is fit for purpose.

The literature indicates that learning space is not limited to classrooms but can be extended to the whole campus. In this context, every part of the campus can be part of a learning process either for all stakeholders or for specific groups. This can include the entrances to the institution and to individual buildings being part of a statement of welcome. Outdoor spaces can be used to lead visitors and students alike through the institution rather than acting as a barrier to their progress. At the same time, indoor spaces can be used to give a range of messages to those using them. The space may be distinguished between formal and informal learning space.

Hence, learning space is about engagement with a range of stakeholders. Whilst it is important that students are motivated to learn, it is important for lecturers to feel comfortable and at ease with the environments for teaching. However, learning spaces are also spaces where external visitors can engage with the work of the institution. In some cases, this is to provide a space for public engagement with the institutions' work. The development of learning space is therefore an ongoing conversation between stakeholders in higher education.

The literature highlights that learning and teaching space is often technologically enhanced but that it is also important not to focus on the technology. What is most important is that these are spaces that motivate students to learn. There is some focus in the literature on how technology is integrated into university buildings, either at the level of installing white boards in teaching rooms, ensuring that the internet is strong and available in all spaces, through to the development of such spaces known as 'HIVES' (Highly Interactive Virtual Environments). The literature has begun, therefore, to highlight that technology has been a vital current component in new space. In the context of Covid-19, technology has been essential as teaching has moved almost entirely online. The longer term impact of the Covid-19 pandemic is, of course, unclear at this stage, but it may be anticipated that technology will no longer be part of the 'future' as suggested by Barn (2020) but very much part of the present of higher education.

In the United Kingdom, the importance of space is beginning to be recognised as part of the effective 'delivery' of higher education. This is clear from the growing academic literature from Temple and Fillippakou (2007) onwards. It is also clear from the increasing number of case studies of practice, such as those included in Elkington and Bligh's (2019) edition. Such studies provide a set of examples of good practice. However, the importance of space is also recognised in a practical way as there is an increasing number of guidelines to help and guide institutions in their development of new space. Guidelines from organisations such as Jisc and UCISA are potentially useful for institutions to develop their learning and teaching space to best effect. However, there is little evidence as yet that indicates how much such guidelines are being used: the critique by Wolff (2019) suggests that such guides are not as well used as they should be.

6.2 Recommendations

6.2.i It is vital to include the different dimensions of the debate on learning and teaching spaces that need to be incorporated and balanced carefully. In addition to architecture and sociological perspectives, it is vital to think about how a space can most effectively be used to learn and teach. In addition, it is important to think in terms of quality assurance.

6.2.ii Projects work best when stakeholders are involved in partnership.

6.2.iii Learning space should be viewed not only as classrooms; every part of the campus should be considered as part of a learning process.

6.2.iv It is important to view learning space as being about engagement with a range of stakeholders.

6.2.v It is important to view learning spaces as having potential for providing opportunities to conduct public engagement with the institutions' work.

6.2.vi Technological enhanced learning is a vital part of developing new learning space but it should not be the only focus.

6.2.vii Existing guidelines for the development of learning and teaching space from organisations such as Jisc and UCISA need to be taken into account for developing a wider EU framework.

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