THE FUTURE
OF LEARNING
ENVIRONMENTS

LEARNING-SPACE COMPASS FRAMEWORK

HEDQF

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This document is authored by Hiral Patel. Many thanks to Caroline Paradise for her valuable feedback and constructive discussions throughout the project.

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The Higher Education Design Quality Forum is an independent organisation which exists to promote high quality design quality across university campuses, buildings and facilities, in the knowledge that this enhances teaching, learning, research and public engagement.

Research is a core component of the charity's activities, supporting the higher education sector to create, maintain and deliver high quality environments through greater understanding and knowledge of how they affect the people that use them. Supporting early career researchers within institutions across UK & Europe to deliver research projects that address relevant issues relating to design of the built environment within the sector is an important component part of our long term strategy.

This study is a part of an ongoing exploration of the design and impact of learning environments within the Higher Education sector, focusing on the connection between curriculum and the physical learning space. Working with Hiral Patel from University of Reading/Exigo Consultancy has allowed us to examine this relationship from the perspective of the different stakeholders and we look forward to seeing how this project develops as we work through a series of pilot studies. Many thanks to Hiral and the wider HEDQF Research Group for the effort and enthusiasm for this project.

Dr Caroline Paradise
Co-chair HEDQF Research Group

HEDQF

EXECUTIVE SUMMARY

The HEDQF 'The future of learning environments' project identified six key themes for research into future learning environments in university estates.

The topics are connected by a fundamental, and overarching, theme of articulating the relationship between learning activities and learning spaces.

The 'learning-space compass' framework and toolkit has been devised to articulate those links and help diverse stakeholders understand and discuss learning needs. This report describes the framework and provides guidance on how to integrate it into the different stages of a learning space project.

LEARNING-SPACE COMPASS OVERVIEW

The 'learning-space compass' consists of a framework and toolkit which:

- maps different typologies of learning and assessment to identify their spatial characteristics;
- develops a vocabulary to express modes of learning to a range of stakeholders;
- connects planning, design and management of learning spaces to learning outcomes;
- encompasses the diversity of disciplines and learners;
- aims to reconceptualise how learning spaces are valued in relation to learning outcomes;
- offers guidance on how and when to engage stakeholders with the framework to inform a learning space project.

KEY CONCEPTS

Learning space needs to be viewed as an interaction of physical, digital and human elements.

The curriculum for a given subject is not a fixed entity. A particular set of learning outcomes can be delivered and experienced in many different ways.

We need to understand more about curriculum patterns relating to disciplines and levels of study and their space implications. We also need to understand the relationship between the curriculum as designed and the curriculum as experienced and the role that space plays in this.

BENEFITS

Initial testing has shown the 'learning-space compass' to be a useful tool to generate a common understanding and facilitate dialogue between different stakeholders.

Used throughout the project life-cycle, it could also be a useful change management tool both by raising academics' awareness of the role of space in curriculum design and delivery and by helping frame the criteria for post-occupancy evaluation in relation to desired learning outcomes.

NEXT STEPS

We are seeking pilot projects to test out the 'learning-space compass'. Lessons learned from the pilots will be fed back into the development of the framework/toolkit as part of a continuous learning process. We will organise an annual learning event to share findings from pilot projects and scope themes for further research.

CONTENTS

ABOUT THIS REPORT

LEARNING-SPACE COMPASS FRAMEWORK BUILDS ON THE LITERATURE REVIEW AND THE WORKSHOPS CONDUCTED FOR THE 'THE FUTURE OF LEARNING ENVIRONMENTS' PROJECT.

The rationale for this framework and the methodology of creating this framework can be found in the 'The future of learning environments' project report.

The key concepts and tools of this framework are discussed in this report. A guide for integrating this framework in the project workflow is also incorporated. The framework was tested during a workshop of 'The future of learning environments' project and a summary of the outcomes are noted. Changes were made to the framework based on the outcomes of this workshop, discussions with the advisory group members and feedback of the HEDQF Research Group.

This report will be of interest to the building design professionals and university academic and curriculum development teams alike. The report gives an overview of the 'learning-space compass' framework and tools which may be used during the briefing stage of learning space projects as well as during the curriculum design exercises to harness the potential of learning spaces to deliver engaging learning experiences.

LEARNING-SPACE COMPASS OVERVIEW

The 'learning-space compass' aims to address the fundamental issue of articulating the relationship between learning activities and learning spaces.

Building on the work of 'The future of learning environments' project, the framework addresses the following research themes that were identified in that project:

- **Learning modes and methods** – The framework maps different typologies of learning and assessment and develops a vocabulary to express modes of learning to a range of stakeholders.
- **Impact of AI and robotics on learning methods and learning spaces** – The framework is devised to prompt reflection on curriculum development in response to new challenges and relate the evolving curriculum to learning spaces.
- **Valuing higher education and its physical environments** – Through closely relating learning activities with learning spaces, the framework aims to reconceptualise how learning spaces are valued in relation to learning outcomes. The framework connects briefing, design and management of learning spaces to learning outcomes.
- **Shifting focus from teaching to learning** The framework gives emphasis to how a curriculum is experienced by the students and prompts discussion around the kinds of learning activities that students will undertake.
- **Diversity within the HE sector** – The framework aims to capture the diversity of academic disciplines by allowing the stakeholders to map their curriculum using a basic vocabulary. By capturing students' experiences of curriculum, the framework enables a dialogue around the learning needs of a diverse student body.

The process of using 'learning-space compass' in the briefing stage of the project will lead to a shared understanding of the planned learning activities among different stakeholders. The process will also lead to identifying spatial attributes which the design team can aspire to in delivering the learning space project. The process of using 'learning-space compass' with academic teams can help to harness the potential of space in their curriculum delivery. Thus, the 'learning-space compass' could be an integral part of aligning change management process with the learning space design project.

LEARNING-SPACE COMPASS KEY CONCEPTS

LEARNING SPACE

Learning space is not conceived as merely a physical space. Learning space is rather conceptualised as an interaction of physical, technological and human; a learning space is enacted in the socio-material practices of learners (Patel and Tutt, 2018; Boys et al., 2014).

LEARNING ACTIVITIES

A repository of verbs describing learning activities including expected learning behaviours, teaching strategies and assessment, is collected based on the experiential learning taxonomy developed by Steinaker and Bell (1979). The multiple intelligences (Gardner, 2006) might offer prompts to enhance the curriculum by addressing the null curriculum:

"The null curriculum refers all those areas and dimensions of human experience which the curriculum does not specify and which are not addressed through teaching." (UNESCO - IBE, n.d.)

CURRICULUM

The word curriculum can be interpreted in a variety of ways. Fraser and Bosanquet's (2006) study of different conceptions of the curriculum in higher education reveal four categories of description: the structure and content of a unit; the structure and content of a programme of study; the students' experience of learning; a dynamic and interactive process of teaching and learning (p.272). The authors suggest that these categories fall into two different orientations towards curriculum: a product orientation and a process orientation. The former is seen as focusing on the content and the structural framework of the study, while the latter conceives the curriculum as an ongoing social activity involving interactions between students, teachers, knowledge and milieu (p. 278).

WHY FOCUS ON CURRICULUM

Curriculum design is of particular interest when it comes to the design of physical space. A curriculum may draw on a range of different pedagogies (such as cognitivism and social constructivism). For a given curriculum, the pedagogical differences would put differing demands on the learning space. Moreover, the nature of the curriculum will differ according to the level of study ranging from undergraduate up to doctorate (Savin-Baden, 2008).

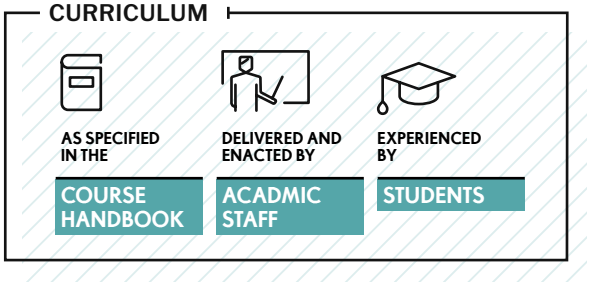
> Thus, curriculum analysis might offer a more holistic overview of the learning journey and the range of spaces that are required at different stages of that journey.

Focus on the curriculum can be further justified from the policy point of view. A coherent university-wide curriculum framework is high on policy agendas for universities in order to ensure a quality learning experience to students. While the Teaching Excellence Framework (TEF) is in its formative stages, a curriculum framework might enable to align university level goals with department/ school disciplinary goals. However, how often curriculum design is carried out in collaboration with the learning space design remains to be explored. McNeil and Borg's (2018) assert that the relationship between space and pedagogy is complex and requires a nuanced description.

THREE VIEWS OF A CURRICULUM

The 'learning-space compass' aims to capture three views of a curriculum: curriculum as specified, curriculum as enacted and curriculum as experienced. By unpacking these three views of a curriculum, the requirements for learning spaces can be better articulated while also providing an opportunity to make the link between learning activities and learning spaces explicit.

THREE VIEWS OF CURRICULUM



Curriculum as specified in course documents

> "The intended or specified curriculum has a focus on the aims and content of what is to be taught – that is, the curriculum which is planned and expressed through curriculum frameworks and other formal documents and which may have the authority of law" (UNESCO - IBE).

The specified curriculum, if mainly project-based, might stipulate a need for a student home-base (for example architectural studio). The specified curriculum may have a significant impact on the overall learning space policy of an institution. The recent development of Northampton University's Waterside Campus does not include lecture theatres as the institution as a whole has adopted active blended learning for their curriculum (Armellini, 2018).

Curriculum as delivered and enacted by the academic staff

> "The implemented or enacted curriculum relates to what is actually put in place for students in schools which may represent local interpretations of what is required in formal curriculum documents. Here curriculum and instruction are seen as being closely interrelated" (UNESCO - IBE).

This view of curriculum considers the challenges that academic staff encounters when delivering learning activities in formal classrooms as well as other spaces such as site visits, laboratories, libraries and social learning or informal learning spaces.

Curriculum as experienced by students

> "The experienced curriculum refers to the formal learning actually experienced by students. This is more concerned with the learners, what knowledge and perspectives they bring, their ability to learn and their interaction with the curriculum." (UNESCO - IBE).

This view of curriculum captures student experiences and the influence that learning spaces have on their learning activities. The experienced curriculum also captures the learning space needs of a diverse student body. Helen Larkin, Nihill and Devlin (2014) have noted four dimensions of student diversity: education, dispositional, circumstantial and cultural. Thus, the experienced curriculum might vary between students due to such a diverse background.

Moreover, Fung (2017) suggests that access to information technology can offer a broader experience of the curriculum:

"The curriculum as it is lived by students, in an information age of open access resources and social media, almost inevitably stretches beyond the specifics of what is planned and 'delivered' by programme teams." (p.18)

UCISA (2016) toolkit contributors noted that stakeholder engagement with students was lacking and that there is a need for communication at several instances even if it might be repetitive. The learning-space compass ensures engagement with students to capture their experiences of learning.

CONTINUOUSLY EVOLVING CURRICULUM

Constant work is required to align learning spaces with the curriculum. The curriculum is constantly evolving as new knowledge develops, new pedagogical approaches are explored and as students construct their learning journeys. Savin-Baden (2008) suggests that "Curriculum construction is, therefore, an active, interrupted and liquid process" (p.27). The enactment of a curriculum by the teachers in the classroom and the experience of the curriculum by students will generate new development opportunities for the curriculum. Thus, alignment work cannot be limited merely to the duration of a learning space project. Integration of space-curriculum alignment needs to be embedded in business-as-usual activities.

LINK TO EXISTING LEARNING SPACE DESIGN AND EVALUATION FRAMEWORKS

McNeil and Borg (2018) propose a framework that links the teaching and learning approach with the affordances of physical-temporal resources (design and location of spaces, patterns and timing of teaching). Their framework constitutes an overall approach to teaching and learning, the design of teaching and learning activities as well as learning spaces, and the enactment of the teaching and learning in the classroom.

The learning-space compass provides a detailed toolkit which could be deployed during the stages of creating an overall approach to teaching and learning and the design decisions that follow. Moreover, the proposed framework also focuses on enacted practice in the classroom and students' experience of a curriculum. Similar to McNeil and Borg's (2018) framework, the learning-space compass could be implemented for new building projects and refurbishments, as well as for business-as-usual activities of finding suitable existing space to deliver a curriculum.

The outcomes of learning-space compass workshops can provide valuable evidence and briefing documentation. This evidence can be useful for accreditation schemes such as the Learning Space Rating System (Brown et al., 2017).

TESTING THE FRAMEWORK

The framework was tested during Workshop 2 of the 'The future of learning environments' project, details of which can be found in 'The future of learning environments' report.

During the workshop, a role-play method was used to test the 'learning-space compass' framework to redesign a fictional course module and reflect on its spatial requirements.

Overall, a very positive reaction was received from the advisory group for Workshop 2. The group suggested that the name 'learning-space compass' was a good description of the framework as it orients our understanding of different learning concepts while linking it to learning space. The advisory group also affirmed that the framework provides a vocabulary for teaching and learning activities, and how they map onto spatial attributes.

Mapping curriculum and learning space would identify areas of overlaps in terms of existing space provision and new space requirements. However, timetabling was identified as a key issue in the exercise.

The spatial attributes emerging at the end of the 'learning-space compass' process may consist of metaphors for learning spaces which may require developing a shared understanding.

The group anticipates this framework would support change management and help to identify the barriers to curriculum change. This tool could be used to help the academic team to change their perceptions of learning space and develop an awareness of the role of space in their curriculum delivery.

LEARNING-SPACE COMPASS TOOLS

UNDERSTANDING THE LEARNING ACTIVITIES - TABLE A

This table provides a repository of key learning concepts which might be useful for the designers when discussing the curriculum with the academic partners. The learning concepts are likely to change depending on the academic discipline for which the spaces are designed. The column "expected learner behaviours" can be used as a taxonomy of learning activities for which spaces need to be designed. This column provides the verbs which might be useful to describe the learning activities of a module or a programme. More activities can be added to this column depending on academic discipline. Assessment, while particularly important from a curriculum perspective, might also frame the criteria for measuring the performance of learning spaces.

The "multiple intelligences" column might be useful to trigger the discussion around different modes of learning a given subject matter, and how learning spaces might respond to evoke different intelligences.

LINKING CURRICULUM TO SPACE - TABLE B

The purpose of this table is to foster continuous discussion between curriculum and learning space at various lifecycle stages: when the curriculum is designed/specified, when the curriculum is delivered and when the curriculum is experienced by the students.

This table might be used at the level of a module or a programme.

Using Table A, identify the present characteristics of the teaching and learning activities as specified in the curriculum, as enacted by the teachers and as experienced by the students.

Having mapped the present approach, identify the desired future characteristics for the teaching and learning activities for specified, enacted and experienced curriculum. Table A might be useful in this step with specific emphasis to "multiple intelligences".

When mapping the future scenario, attention might also be given to the aspects of the hidden curriculum:

> "The hidden curriculum refers to student experiences of school beyond the formal structure of the curriculum, and in particular the messages communicated by the school or education system concerning values, beliefs, behaviours and attitudes. The messages contained in the hidden curriculum may complement the intended and implemented curricula or they may undermine them." (UNESCO - IBE)

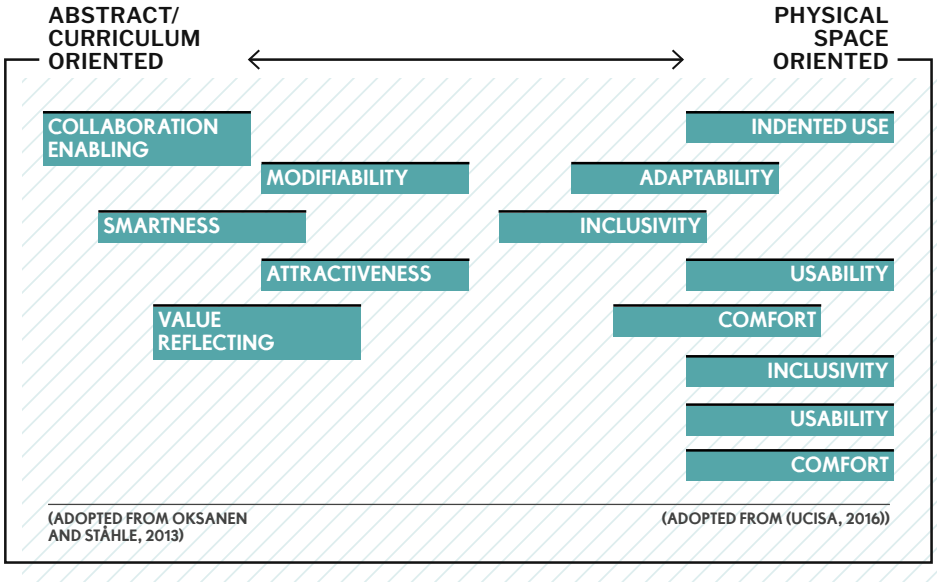
Learning spaces can express the culture of the department or university. For profession-based disciplines, learning spaces also express professional attitudes and work culture in which students will be inducted. The skills developed through the academic and informal curriculum of social and extracurricular activities have a direct and indirect impact on the career outcomes of the students (p.13, Universities UK, 2016).

Along with engaging the different stakeholders listed in the workflow, input to these sections can be provided by:

- University policy documents such as curriculum framework, student charters.
- Programme and module related documents
- External examiners/auditors feedback
- Student survey findings
- 'A day in the life' studies
- Learner profiles

Student profiles might also be useful to sense diverse student needs. For example, student archetype cards from Sheffield Hallam University's curriculum design toolkit (https://blogs.shu.ac.uk/graduatecapabilities/files/2017/07/Archetype-cards.pdf), might offer insights into diverse space needs depending on the opportunities and challenges that each type of student poses. The profile descriptions might have to be adapted to suit the cultural sensitivities demanded by the institutions and the audiences involved.

The outcome of Table B is identification of spatial attributes linking curriculum to learning space. The attributes might range from abstract/curriculum oriented to those which are more physical space oriented. Some examples of such attributes are presented below.



SAMPLE SPATIAL ATTRIBUTES LINKING CURRICULUM TO LEARNING SPACE

LEARNING-SPACE COMPASS PROCESS

INTEGRATING LEARNING-SPACE COMPASS IN THE PROJECT WORKFLOW

Option 1 – A briefing tool

This mode of application is to allow the discussions regarding the curriculum during briefing process of a learning space project. This application is useful to initiate discussions between various stakeholders in order to link the curriculum to learning space. Refer Table 1 for a detailed description of this mode of application.

The framework champion in this mode of application can be either from the university estates team or the design team.

Option 2 - Throughout the project lifecycle

In this case, the learning-space compass framework offers a continuous dialogue not just during the life-cycle of the project but also during an university's business as usual activities subsequent to a project. Constant alignment is required between the curriculum and space. This might be due to changes in the specified curriculum, or adoption of a different approach for enacting the curriculum, or feedback from the students in how they experienced the curriculum. Refer Table 2 for a detailed description of this mode of application.

Moreover, adopting the framework throughout the project lifecycle can lead to developing project performance goals in relation to learning outcomes. These goals can be monitored or measured once the project has been completed. Such an approach shifts the focus from the post-occupancy evaluation of a building's technical performance towards the alignment of the learning spaces and the curriculum.

Evaluation of learning space during the enacted curriculum and experienced curriculum phase is different than a conventional post-occupancy evaluation. Blackmore et al., (2011) undertook a literature review to link learning spaces and learning outcomes. The authors critique the post-occupancy evaluations where students and teachers are just 'respondents' and where evaluations fail to capture the complexities of lived experience of students and teachers (p.21).

This mode of application of learning-space compass will be useful for the academic and estates teams in their business-as-usual operations to identify suitable spaces for their evolving curriculum. If the curriculum needs diverge significantly from the available spaces, a business case for new spaces can be initiated.

The framework champion in this mode of application can be either from the university estates team or the academic team.

STAKEHOLDERS TO INVOLVE

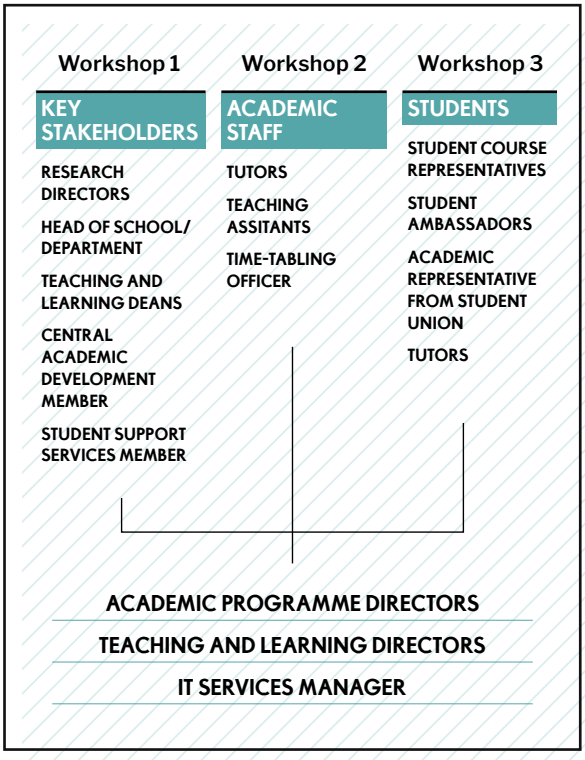
UCISA (2016) provides a list of stakeholders for a learning project:

- "studying, using the space, often over an extended day;
- academic leadership (this may be discipline specific or related to generic space);
- teaching, or some form of guided learning, in the space;
- managing the fabric of the buildings;
- managing the IT and electrical infrastructure;
- learning support including audio-visual support;
- timetabling the space;
- providing learning resources;
- providing technical support in the space;
- providing other forms of student support in or related to space;
- cleaning, setup and maintenance of the space;
- security of the space;
- health and safety in the space;
- financing the project and recurrent costs;
- supporting the project as an external specialist;
- events and conferences;
- student and academic services events (such as career fairs)." (p.17)

UCISA (2016) also notes that it might be difficult to bring all these different stakeholders together for a discussion. This is an important practical concern and additional meetings might be required with stakeholders who could not attend the learning-space compass workshops. An indicative list of stakeholders that can be involved during different workshops is noted in Table 1 and Table 2.

The 'learning -space compass' workshop may be organised by grouping stakeholders according the three views of the curriculum as depicted in the figure below:

ORGANISING 'LEARNING-SPACE COMPASS' WORKSHOPS WITH DIFFERENT STAKEHOLDERS



NEXT STEPS

PILOT PROJECTS TO TEST 'LEARNING-SPACE COMPASS'

For the next stage of the project, pilot projects are sought to test the 'learning-space compass'.

In order to promote continuous learning and development around the topic of linking space and curriculum, an extension to the participative methodology is proposed (Figure 1). This methodological phase involves collecting feedback from the pilot projects and organising an annual learning event based on the project experiences. The outcomes from the learning event might feed into the framing of new research projects. Moreover, the lessons from the pilot projects should be captured through a continuous learning approach. Such an approach will allow continuous development and refinement of the framework and toolkit. A databank of pilot projects may also be curated to create a knowledge base for the framework/ toolkit; however, considerations might be required in terms of ownership and access to such a databank. An annual event might be organised to share findings from pilot projects and scope themes for further research.

During the pilot project stage, the following aspects should be investigated further:

- **Does this framework address needs of different academic disciplines?**
- **Does this framework work when considering specific pedagogical approaches such as SCALE-UP?**
- **Undertake ethnographic research into the application of the framework to understand the needs for further development of the conceptual framework as well as the implementation process.**
- **Develop case-study and feedback templates when using the toolkit. (Figure 1). These templates might be developed to comply as evidence for space performance rating systems such as that developed by Educause (Brown et al., 2017).**
- **Compare the results from different academic disciplines to understand overlaps for spatial requirements.**

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TABLES & FIGURES

FIGURE 1

PARTICIPATIVE METHODOLOGY FOR CONTINUOUS LEARNING

	Tasks	Tools	Outcomes
Activity: Pilot projects	Capture lessons from pilot projects. Develop feedback mechanisms to capture implementation stories. Discuss project findings with HEDQF research group members and share lessons with wider HEDQF community.	Feedback mechanisms	Stories/accounts of implementing the conceptual framework on pilot projects. Project sheets for sharing lessons with wider HEDQF community.
Annual Learning Event	Present findings from pilot projects. Identify barriers/limitations of the framework and toolkit. Discuss modifications to develop the framework.	Pilot project sheets/ accounts	Benefits and limitations of the framework and toolkit. Suggestions for the development of the framework.
Activity: scoping research themes	Review outcomes from the annual learning event and suggestions for the development of framework. Discuss further research themes stemming from the pilot projects with HEDQF research group. Scope future research project(s).	Pilot project sheets/ accounts, outcomes of annual learning event.	Proposals for further research.

TABLE A

UNDERSTANDING THE LEARNING ACTIVITIES

EXPERIENTIAL LEARNING CYCLE (KOLB AND KOLB, 2005)	LEARNING PRINCIPLES (STEINAKER AND BELL, 1979)	EXPECTED LEARNER BEHAVIOURS WHAT STUDENTS WILL DO? (STEINAKER AND BELL, 1979)	APPROPRIATE TEACHING STRATEGIES WHAT TEACHERS WILL DO? (STEINAKER AND BELL, 1979)	ASSESSMENT (STEINAKER AND BELL, 1979)	MULTIPLE INTELLIGENCES (GARDNER, 2006)
CONCRETE EXPERIENCE	EXPOSURE	SEEING, HEARING, SMELLING, TASTING, TOUCHING, NOTICING, REACTING, RECOGNIZING	DEFINING, LECTURING, DATA PRESENTATION, USING AUDIO-VISUALS, PROVOKING ATTENTION, DIRECTING OBSERVATION, PROVIDING INTEREST CENTRES, PROMOTING PROBLEM IDENTIFICATION, DEMONSTRATION	OBSERVING LEARNER REACTION TO THE INITIAL ACTIVITIES TO DETERMINE ATTENTION; UNDERSTANDING OF TERMS, SCENES AND PURPOSE; AND READINESS AND/OR WILLINGNESS TO PROCEED	MUSICAL-RHYTHMIC, VISUAL-SPATIAL, VERBAL-LINGUISTIC, LOGICAL-MATHEMATICAL, BODILY-KINAESTHETIC, INTERPERSONAL, INTRAPERSONAL, AND NATURALISTIC EXISTENTIAL
CONCRETE EXPERIENCE/ REFLECTIVE OBSERVATION	PARTICIPATION	OBSERVING, DISCUSSING, EXPLORING, ASSESSING, VISUALIZING, DIRECTED READING, ESTIMATING, MANIPULATING, ORDERING, COLLECTING, MODELLING, DEFINING, LISTENING	DIAGNOSING OR PRESCRIBING, SIGNPOSTING, CLARIFYING DISCUSSIONS, PROVIDING SUPPORTIVE FEEDBACK, PROMOTING OR IMPLEMENTING ORDERING, DRAMATIC PLAY, MODELLING OR IMITATION, MANIPULATIVE ACTIVITIES, LEARNING AT CENTERS, RECALL OR REPLAY ACTIVITIES, SIMPLE DATA-GATHERING LESSONS.	EXAMINING STUDENT CHOICES; SIGNALS OF UNDERSTANDING OR LACK OF UNDERSTANDING; REPLICATIONS; DISCUSSIONS; QUESTIONING TO DETERMINE UNDERSTANDING; ABILITY TO SUCCEED; AND, WHERE APPROPRIATE, EXPLANATION OF HOW THE LEARNER "WOULD DO IT" IF GIVEN THE OPPORTUNITY	
ABSTRACT CONCEPTUALISATION	IDENTIFICATION	ASSOCIATING, CLASSIFYING OR CATEGORISING, EXPLAINING, EXPERIMENTING, MAPPING, EVALUATING, HYPOTHESIZING, INTERPRETING, INVESTIGATING, WRITING OR DRAWING, APPLYING, CHARTING, READING OR OBSERVING FOR INFORMATION	CONTINUING DIAGNOSIS, PRESCRIPTION, AND TREATMENT TO MEET INDIVIDUAL AND COMMON NEEDS; PROVIDING CORRECTIVE FEEDBACK; PROMOTING ADDITIONAL RESOURCES; TESTING, QUESTIONING, OR CONFERENCING; PROMOTING HYPOTHESIZING, EXPERIMENTING, SIMULATION, AND DRILL ACTIVITIES; ENCOURAGING GROUP DISCUSSIONS; USE OF REINFORCEMENT CENTRES, FIELD EXPERIENCES; PEER TEACHING	USING CRITERIA, TEACHER-DEVELOPED TESTS OR ASSIGNMENTS, AND MENTAL OR ACTUAL CHECKLISTS TO ASSESS STUDENT PROGRESS AND TEACHING OR UNIT EFFECTIVENESS.	
ACTIVE EXPERIMENTATION	INTERNALIZATION	ANALYSING (DEDUCTING, INFERRING), SUMMARIZING, GENERALIZING, COMPARING OR CONTRASTING, INQUIRING, IN-DEPTH PROBING, TRANSFERRING	REMOTIVATING, STRUCTURING SITUATIONS FOR PROBLEM SOLVING, ANALYSIS OF MORE THAN ONE SYSTEM, ROLE PLAYING, CREATING, EXPANDED SKILL PRACTICE, ENCOURAGING STUDENT PROBING	USING PROJECTIVE MEASURES SUCH AS OPEN-ENDED, ANONYMOUS RESPONSE QUESTIONNAIRES AND/OR DIRECT MEASURES SUCH AS RATING SCALES AND INTERVIEWS; USING A POST- AND RETEST METHOD IN WHICH A DIFFERENT TEST FORM OR ASSIGNMENT IS GIVEN AT A LATER DATE AND IS COMPARED WITH THE ORIGINAL TEST OR ASSIGNMENT TO DETERMINE RETENTION	
ACTIVE EXPERIMENTATION/ RESTART LEARNING CYCLE WITH CONCRETE EXPERIENCE	DISSEMINATION	COMMUNICATION, DEBATING, INFLUENCING, DEMONSTRATING, PRESENTING, MOTIVATING	STUDENT EXPRESSIONS (REPORTING, ORAL PRESENTATIONS); PRODUCTIONS; DRAMATIZATION; SEMINARS; THE SUPPORTIVE, INFORMATIONAL, AND CORRECTIVE FEEDBACK NECESSARY	USING STUDENT SELF-EVALUATION INSTRUMENTS; EVALUATING THE TIME DEVOTED TO TASKS, THE VARIETY OF TECHNIQUES EMPLOYED TO USE OR TO PROMOTE LEARNING, AND/OR THE DEGREE OF INFLUENCE ACHIEVED.	

TABLE B

LINKING CURRICULUM TO SPACE

WHAT TO ANALYSE (RIGHT) / WHEN TO ANALYSE (BELOW)		KNOWLEDGE	PEDAGOGY		ASSESSMENT	ATTRIBUTES LINKING CURRICULUM AND LEARNING SPACE
			EXPECTED LEARNER BEHAVIOURS	APPROPRIATE TEACHING STRATEGIES		
Curriculum as specified in course documents	PRESENT					
	FUTURE					
Curriculum as delivered and enacted by the academic staff	PRESENT					
	FUTURE					
Curriculum as experienced by students	PRESENT					
	FUTURE					

TABLE 1

INTEGRATING LEARNING-SPACE COMPASS IN THE PROJECT WORKFLOW – OPTION 1– A BRIEFING TOOL

Project Stages	Learning-space compass activities	Outcomes
RIBA Stage 0-1	**Workshop 1: Learning-space compass workshop** **OUTCOMES** Identify project goals pertaining to the learning activities. **TASKS** – Work through 'Table A - Understanding the learning activities'. – Work through 'Table B - Linking curriculum to space'. **STAKEHOLDERS WHO CAN BE INVOLVED** Academic programme directors, student course representatives, academic representative from students' union, teaching and learning directors, research directors, teaching and learning deans, central academic development member, student support services member, IT services manager, estates project manager, space manager, external project manager/consultant.	University's internal business case and committee reports Input into the strategic brief Input into the functional project brief
	Workshop 2 **OUTCOMES** Translate Workshop 1 outcomes into project goals. **TASKS** – Review the outcomes of Tables A and B. – Articulate project goals pertaining to the learning activities. – Populate room data sheets for key spaces, by identifying physical space and IT requirements. – Identify project information which will be required at the handover stage. **STAKEHOLDERS WHO CAN BE INVOLVED** Academic programme directors, teaching and learning directors, student course representatives, central academic development member, IT services manager, estates project manager, space manager, estates maintenance manager, external project manager/consultant, design team.	
	Workshop 3 **OUTCOMES** Identify the need for new build by undertaking analysis of existing estate. **TASKS** – Match the learning space requirements from Workshop 2 to existing estate. **STAKEHOLDERS WHO CAN BE INVOLVED** Academic programme directors, teaching and learning directors, student course representatives, IT services manager, estates project manager, space manager, estates maintenance manager, external project manager/consultant.	

TABLE 2

INTEGRATING LEARNING-SPACE COMPASS IN THE PROJECT WORKFLOW – OPTION 2 – THROUGHOUT THE PROJECT LIFECYCLE

Project Stages	Learning-space compass activities	Outcomes
Business as usual RIBA Stage 0-1	**Workshop 1: Learning-space compass workshop** **OUTCOMES** Identify project goals pertaining to the learning activities. **TASKS** – Work through 'Table A - Understanding the learning activities'. – Work through 'Table B - Linking curriculum to space'. **STAKEHOLDERS WHO CAN BE INVOLVED** Academic programme directors, student course representatives, academic representative from students' union, teaching and learning directors, research directors, teaching and learning deans, central academic development member, student support services member, IT services manager, estates project manager, space manager, external project manager/consultant. **Workshop 2** **OUTCOMES** Translate Workshop 1 outcomes into project goals. **TASKS** – Review the outcomes of Tables A and B. – Articulate project goals pertaining to the learning activities. – Populate room data sheets for key spaces, by identifying physical space and IT requirements. – Identify project information which will be required at the handover stage. **STAKEHOLDERS WHO CAN BE INVOLVED** Academic programme directors, teaching and learning directors, student course representatives, central academic development member, IT services manager, estates project manager, space manager, estates maintenance manager, external project manager/consultant, design team. **Workshop 3** **OUTCOMES** Identify the need for new build by undertaking analysis of existing estate. **TASKS** – Match the learning space requirements from Workshop 2 to existing estate. **STAKEHOLDERS WHO CAN BE INVOLVED** Academic programme directors, teaching and learning directors, student course representatives, IT services manager, estates project manager, space manager, estates maintenance manager, external project manager/consultant.	University's internal business case and committee reports Input into the strategic brief Input into the initial project brief

Project Stages	Learning-space compass activities	Outcomes
RIBA Stage 2 - 5	**Curriculum alignment review meetings** **OUTCOMES** Ensure project brief and design proposals are aligned with curriculum goals. **TASKS** – Review project brief and design proposals in relation to the outcomes of Workshop 1, 2 and 3. **STAKEHOLDERS WHO CAN BE INVOLVED** Academic programme directors, student course representatives, academic representative from students' union, teaching and learning directors, research directors, teaching and learning deans, central academic development member, student support services member, IT services manager, estates project manager, space manager, external project manager/consultant.	Input into brief development and design review
RIBA Stage 6 - 7	**Curriculum in the new space – capturing the benefits - Workshop** **OUTCOMES** Share the design intent with building users and capture feedback on use of new learning spaces. **TASKS** – Organise the workshop during the first year of occupying the new space. – Design team to discuss the design intent with building users. – Review project brief and outcomes of Workshop 1, 2 and 3 in relation to the feedback from building users. **STAKEHOLDERS WHO CAN BE INVOLVED** Academic programme directors, student course representatives, academic representative from students' union, teaching and learning directors, research directors, teaching and learning deans, central academic development member, student support services member, IT services manager, estates project manager, space manager, external project manager/consultant.	Input into facilities management policy
Business as usual Curriculum review	Undertake Workshop 1, 2 and 3 as described in business as usual stage above, to ensure ongoing alignment between evolving curriculum and existing learning spaces.	Input into facilities management policy Input into five-year development plans Input into curriculum design and development plans Input into business cases and university committee reports for learning space needs.

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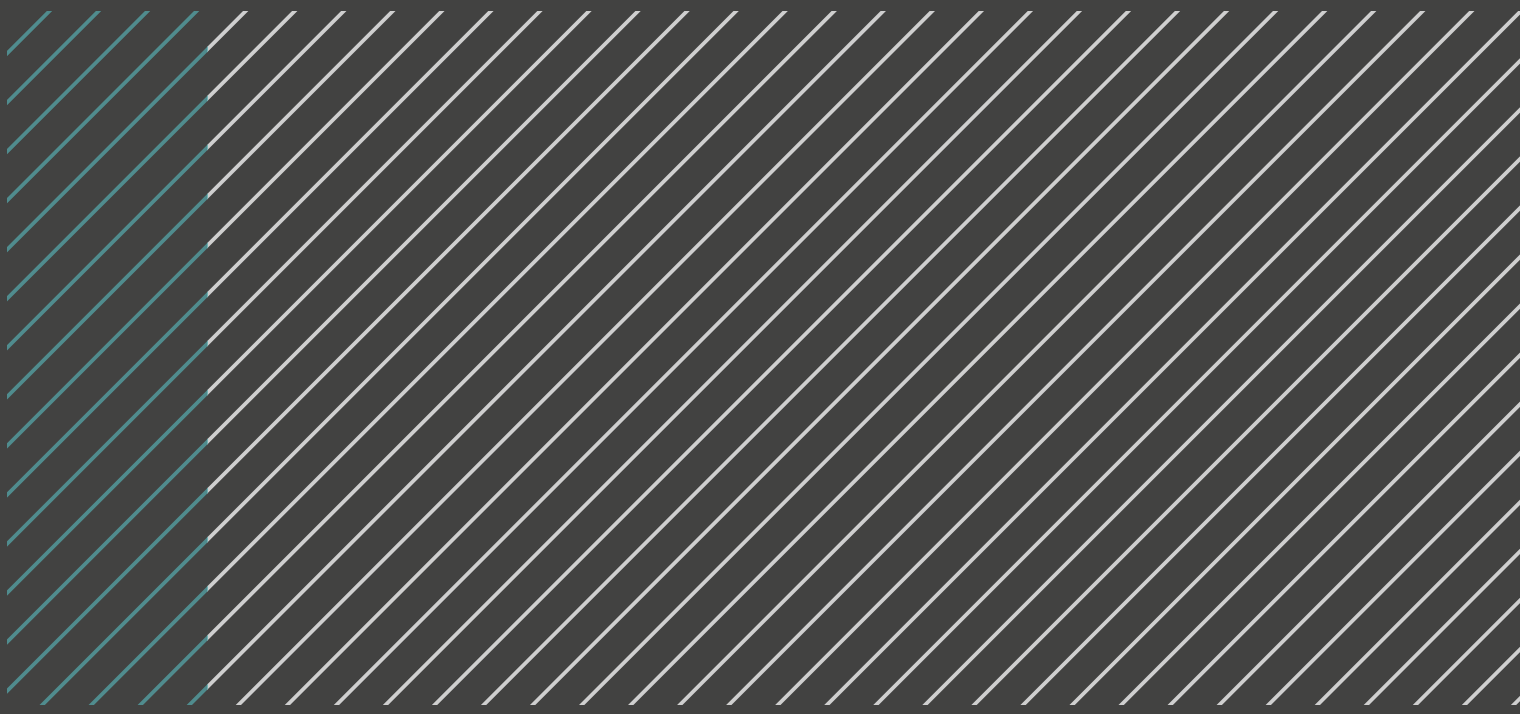

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