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THE [DESIGN OF] EDUCATIONAL SPACE: A PROCESS-CENTRED *BUILT* PEDAGOGY

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ABSTRACT
Borrowing Oblinger's assertion, space "whether physical, virtual or mental has an impact on the learning process" [1]. A built pedagogy, or the ability of space to define how one learns, teaches, acts or responds, is a noteworthy but also a much-neglected subject-matter. The models, theories and development of any educational curricula in Higher Education (HE) should also consider the perspective of those who inhabit; design and (re)create the spaces of learning every day. It should take into account the importance our environs and settings have as agents for change, interaction and reflection. This enquiry questions how existing educational facilities facilitate learners' expectations and engagement; how the construction of place enhances the construction of knowledge and meaning; and how (the design of) space influences the activities and principles that assist learning – how the process of learning is built by and into the learning space. This paper presents an enquiry based on a flexible qualitative approach, by highlighting key studies, examples and individual explorations on the topic. Through different techniques of data collection, two main tasks of enquiry were carried out: firstly, the definition of possible scenarios and typologies for two site-specific locations at HE Institutions through literature review and photo-surveys; and secondly, the exploration of personal conceptions regarding typical and desired learning spaces, based on a small set of interviews with HE colleagues, students and educators. The paper concludes with some personal reflections on the relationship between the process of learning *per se* and the educational space of/for the learning experience.

Keywords: educational space, built pedagogy, attributes of place, learning ecology

1 INTRODUCTION

This enquiry reports on the final research portfolio (2006/07 Module 2 EDUCG02: *Developing the Curriculum in Higher Education*) carried out for the Postgraduate Certificate in Learning and Teaching in Higher Education at the Centre for the Advancement of Learning and Teaching, University College London (CALT-UCL). The research suggests a new direction in Education and Design disciplines is literally 'taking place' [6], towards a process-centred framework where the focus in neither at the start of the process (the institution) nor at the end-result (the 'employable' graduate), but in the 'space in-between': the learning process and the place for knowledge and critical reflection. Monahan's proposal for the development of a "built pedagogy" (*i.e.* the ability of space to define how one learns, teaches, acts or responds) is the theoretical model that sustains this work [2]. It proposes that any curriculum development in HE can also grow out of how learning spaces influence educational dynamics and vision.

Today's diversity of learners and modes of learning is synonymous of attitudes, expectations and constraints that largely differ from those of 10 or 20 years ago [3]. In fact, spaces designed in the 1950s are not likely to fit the 21st century learning approaches and learners' experience. Active, participatory, social, experiential, networked, connected, and flexible learning styles do not necessarily match with the traditional educational models of the past [1]. Communication and information technology (CIT), contemporary mobility, space and time constraints, and other personal responses and expectations towards the individual learning process have, to some extent, altered the role and materiality of the learning space. If contemporary debate in HE accepts the paradigm shift from teacher/institution-centred education to student/learner-centred approaches [4]; then it should also acknowledge that learning as a process can occur anyplace, at any time, in either physical or virtual spaces. Hence, the [design of] educational space needs to be explored as a process, not as a final predetermined product or inflexible setting [5]. The following sections will briefly present a summary of educational and architectural studies and explorations related to this pedagogy-space nexus. The aim of the enquiry tasks was to investigate some of the following questions: How can spaces of learning – physical, social and personal – constrain and/or enhance educational processes? What are the most important attributes of learning spaces? The last section on 'reflections' considers some critical responses.

2 SPACE AND PLACE I: INTERDISCIPLINARY TERMINOLOGY

Traditionally, on-campus formal university teaching revolve around the notion that physical environments such as lecture theatres, tutorial rooms, laboratories and workshops are the typical venue/locations for the process of education [6]. The space or "venue" is only a diminutive and taken-for-granted part of the selection process of any teacher's talk/lecture/seminar/presentation scheduled for the development of any given course module. However, as Oblinger (2006) points out, whether occurring in formal settings or resulting from "serendipitous interactions among individuals", *space* is also an agent of change, interaction and reflection within the learning process. She states: "[space] can bring people together; it can encourage exploration, collaboration, and discussion. Or, space can carry an unspoken message of silence and disconnectedness" [1]. Currently, critical thinking, facilitation, socio-critical pedagogy, learning autonomy and self-awareness, are some of the key terms for the development of one's process of education. These emergent educational values are assertively embedded in the construction of the self and personal meaning, but also in the construction of *place*. In the learning process something takes place, by individually constructing or establishing connections, relations, theories, identities, positions or even physical spatial configurations. This involves the constructivist notion of a personal place: a safe and comfortable 'environment' to explore and develop learning experiences. In built environment disciplines, the relationship of personal experience to environmental settings is still a controversial but a much-loved topic. Numerous philosophical and design theories in spatial studies attempt to explain or investigate the complex phenomenological place-based experience, *i.e.* the importance of finding a meaning and identity in the physical and social elements that structure the everyday life. In many of the texts reviewed for this enquiry, the terms *space* and *place* are used interchangeably, both terms referring to physical locations and spatial attributes of our built environment. However, for this paper, one might propose that space and place are two related but distinct things: the first, related to material reality; the latter, as an emotional and ideological conception. It is suggested that it is *the* process of constructing connections

(*i.e*. constructing meaning and knowledge) in and to the physical reality that transforms any given *space into a place* – thus the expression 'finding the essence, sense of place'. Following this premise, I refer not only to the design of physical spaces, concerned with architectural health and safety issues, but mainly to the concept of a pedagogical protected environment [7]. A "protective and competence-enhancing" context for the individual's development [8], which enables *both* learner and educator to experience learning cycles of development, self-assessment, review and fulfilment.

3 ENQUIRY STRUCTURE

The enquiry process can be described within a hybrid flexible (qualitative) approach. The process followed different ways of data collection, namely: documentary analysis, imagery survey (photo/film), observations, and interviews.

3.1 Key studies

Texts relevant to the broad theme of 'educational spaces' are two-fold. Firstly, there are theoretical educational references to learning processes in general, in which the learning environment is either regarded as a contextual consideration or associated with particular learning theories [9-11]. Secondly, stand the architectural practical manuals of 'school design', which list design principles and vast considerations on the role of CIT in the planning and management of educational facilities [6; 12-13]. There is a large gap between those two groups of literature [1; 14], which is sometimes filled by environmental psychology studies on 'place attachment' [1; 15] and recent educational ones on "smart classroom" changes [16]. Some of these texts appear to be rooted in modern design theory, which emphasise the functional and programmatic aspects over educational considerations. Meaningful connections between the learning process, its agents and contexts, are very broadly summarised as 'design principles based on educational vision'. Nevertheless, the following works were a starting point for the discussion of 'built pedagogy' theory: Oblinger (2006) [1]; Monahan (2002) [6]; Future Lab's (2006) [7]; JISC (2006) [17]; Project Kaleidoscope [18]; AMA (2005) [19].

3.2 Site-specific studies

In order to explore the abovementioned readings, a brief site-specific study on two different locations was conducted at: 1. UCL, Bartlett School of Architecture – the old Wates House building, London, UK; and 2. Delft University of Technology (TU Delft), Faculty of Industrial Design Engineering – the recently built School of Design, Delft, The Netherlands. Whereas the first location/building belongs to a labyrinthine and scattered university campus all over the city of London Bloomsbury's and Fitzrovia quarters; the latter, in Delft, is inscribed in a self-contained polytechnic campus. Contrarily to these 'fragmentation vs. assembly' campus plans, Bartlett Architecture School is situated in one of the most rigid, undersized and fixed building plans of UCL; and the Industrial Design School occupies one of the most recent and flexible open-plan facilities of TU Delft. During several visits to each location, observations (analysis of physical spaces, circulation routes and spatial use patterns) were captured through note-taking, photos and short films, which in turn were completed by the literature review. The groundwork on each site's imagery, sketches and aerial schemes/plans will be presented and discussed elsewhere.

3.3 Tasks and methods

The following two tasks were undertaken: '*task 1: definition of scenarios*' and '*task 2: conceptions and expectations on learning spaces*'. Through literature review and photo-surveys, task 1 derived from the identification of physical space typologies already used in spatial studies, which facilitated the definition of scenarios for the study of the 'space-place/pedagogy-place' paradigms at those two different locations. Through observation and interviews/conversations with HE colleagues, students and educators, task 2 was based on the exploration of real informants' perceptions regarding the influence of physical and social environments in teaching and learning activities.

4 SPACE AND PLACE II: TASKS

4.1 Task 1: definition of scenarios

Previous studies on classroom environment and the venue *per se* have shown that the physical arrangement of spaces can in fact affect the behaviour of both students and teachers, for a well-structured teaching/learning venue tends to improve student academic and behavioural outcomes [20]. While classrooms can still be regarded as the core setting of the educational process, it is noticeable that from architectural space types to place attributes and qualities, the relationship between learning and space comprises many different approaches. After World War II, during the reconstruction period, Winston Churchill reportedly stated: "we shape our buildings, and afterwards our buildings shape us". The design of learning spaces used to 'hold on' to this statement, first the space then the experience of inhabiting it. Nevertheless, the current paradigm shift from *spatial features to place attributes and qualities* suggests that a new definition of educational scenarios will integrate both the pedagogy-place nexus [6] and the importance of built pedagogies [2]. Table 1 presents an overview and comparison of some of the perspectives encountered throughout the enquiry.

Table 1 'From spatial rules to place qualities'

Perspectives/approaches		**Terminology**	**[ref.]**
Institution/function-driven (spatial demands/ use/ utilisation)	**space typology**	*formal spaces* (typical institutional classroom-type), *informal spaces* (personal/social dwelling-types). *F-space* (formal), *S-space* (social learning), *C-space* (creative).	[1] [18] [14]
	space configurations	entrances/ reception areas; teaching spaces; vocational spaces; learning centres; social and personal spaces.	[17] [19]
		group teaching/learning spaces; learning clusters; simulation/ immersive environments; peer-to-peer & social learning settings; individual + external spaces.	[12] [13]
	design considerations	temperature, humidity, air/ventilation; illumination/ light/views; acoustical quality/noise control; communication, electrical power/technology infrastructures; material textures/colours; furniture/fittings; density/use/facilities management; size/shape/ scale; sustainability/accessibility.	[19] [20]
	'keys to success'	pedagogical approach; informed design/implementation team; strategic/estate development plans; stakeholders involvement; space management; learn from others (case studies/ discussions forums); IT/audio-visual tools; flexibility for different learning modes; learner/teacher feedback on effectiveness.	[19]
	spatial rules	flexibility, comfort, sensory stimulation, technology support, decentredness, studio classroom, information commons/ laboratory, living-learning spaces, niches.	[15] [19]

Humanistic/process-driven (place attributes/ qualities)	**properties**	fluidity, versatility, convertibility, scalability, and modifiability.	[2]
	design principles	space for multiple uses; flexibility; use of vertical dimension; integration of discrete campus functions; features/functions to maximise teacher and student control; alignment of different curricula activities; student access/ownership of learning space.	[6]
	process changes	from health, adaptability, resource stewardship, energy efficiency, comfort, spirit, space efficiency, respect, durability, harmony with place; to cooperation, understanding learner needs, meaningful buildings as expressions of community/place, health/spirit as source of life, exploration of non-specific spaces.	[21]
	optimal/protecti ve experiences	motivation, collaboration, flexibility, personalisation, inclusion, and support; sense of classroom belonging/connectedness; active engagement/ collaboration	[17] [8]
	construction of self	knowledge construction process; learning in realistic/relevant contexts; learning in social experience; multiple modes of representation and perspectives; ownership/voice in learning	[22]

4.2 Task 2: conceptions and expectations on learning spaces

In order to challenge conceptualisations of learning spaces and place qualities within my disciplinary domains (Design and Education), the research method of interviewing was used at the two site-specific locations: (1) Bartlett, UCL and (2) TU Delft. A total of five interviews were carried out: with a master student (1), two doctoral students (1+2), and two lecturers (1+2). It is possible to claim that all interviewees were positively responsive to the *built pedagogy theory* as a critical reflection affecting learning [15]. Whereas students were more razor-sharp towards the "value of institutional provision" for research-/workshop- spaces, educators continually elaborated on "educational vision and learning reflections". This particular research task will be presented elsewhere.

5 SPACE AND PLACE III: REFLECTIONS

This brief study concludes that the relationship between physical place and its agents is still far from being integrated in the discussions of curriculum development in HE. As the learning theory discourse progressed, the idea that teaching and learning processes are context-dependent has been slowly put forward. A distrustful view, which came up from the enquiry conversations, is that: while school settings are typically envisioned as places that promote the development of knowledge, the structures in which learning actually occurs reflect only spatial control, disciplinary time constraints and business-driven premises. The result is that while new campus developments present architecturally challenging building types, they continue to reinforce teacher/institution-centred pedagogical practices. At the same time, thinking on the relationship between student and learning environment has gradually reached a point where alternative perspectives for student-campus relationship need to be articulated. For instance, Radloff (1998) proposes a '*learning ecology*' encompassing multiple dimensions of students' on-campus existence, which directly affect their learning experience [23]. Radloff's concept goes beyond the walls of teaching facilities into the greater educational environment, stressing the crucial role which open and social spaces play in campus life. The School of Industrial Design in Delft embodies this learning ecology. Conversely, Bartlett School of Architecture is the architectural example of how problematical spatial control and management prevails over educational/pedagogical reflections. Current architectural/educational design practices organise learning environments as closed systems (UCL-Bartlett); however, based on how people participate in their social/physical environments, learning settings should be thought of

as integrated systems (Delft School). While these ideas are neither revolutionary nor mainstream, instead of thinking of educational settings as formal *spaces* for moving through settings, these environments need to be understood as *places* where the entire learning ecology supports knowledge, interaction and reflection. A new beginning, then: the [design of] educational places must be critical part of the HE curricula development.

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