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Designing learning spaces for (partially) online lives: *recombinant architecture*

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Biography
Raylee's interest in learning space design emerges from library designing experiences with school communities as a consultant with Brisbane Catholic Education and through tertiary teaching at Queensland University of Technology in the Master of Learning Innovation (Teacher-Librarianship), most particularly in the unit *Designing Spaces for Learning*. Raylee's commitment to this area of interest is fostered through continuing consultancy with schools and her doctoral research project *Designing the school library: spaces and places for learning.*

Abstract

The notion of *recombinant architecture* signals a loosening of spatial connections between physical and digital-online environments (Mitchell, 1996; 2000; 2003). Such an idea also points to the transformative nature of the designing approaches concerned with the creation of spaces where *bits meet bodies* to fulfil human needs and desires and, at the same time, pursuing those human dimensions of space and place which are so important to our senses of belonging, physical comfort and amenity. This paper proposes that *recombinant* spaces and places draw on familiar architectural forms and functions and on the transforming functions of digital-online modes. Perspectives, approaches and resources outlined in the paper support designing and re-designing enterprises and aim to stimulate discussion in the Digital Environments strand.

Designing learning spaces for (partially) online lives: *recombinant architecture*

Preamble

The title of this paper refers to concepts in Bill Mitchell's texts *Space, place and the Infobahn* (1996) and *e-topia: urban life, Jim - but not as we know it* (2000). As we pay attention to learners and to the learning spaces of schools, the descriptor *recombinant architecture* captures something of the dynamic interplay of physical and digital-online dimensions of the living and learning spaces of participants in wired cultures. This paper proposes that *recombinant* spaces and places draw on familiar architectural forms and functions and also on the transforming functions and spaces of digital-online modes (Mitchell, 1996, 47; 2000, 107; 2003).

Designing is selected as a preferred term throughout the paper in order to emphasise the power in the suffix to convey the *act and the art of doing* as a flowing and evolving process: of design*ing*. To prefer the term *design* would imply that there is a finished product, an epitome or embodiment of learning spaces which can provide generalised solutions to the questions of learning space designing in most cases. Pursuing template and packaged solutions for learning space designing works to perpetuate the egg-crate designing and *parachute principle* processes so evident in Australian school facilities historically, and limits community agency in evolving learning spaces able to respond to living and learning needs (Elliott Burns, 2005).

Participants in the Digital Environments strand are invited to consider the perspectives explored in this paper and others in the strand, to inform the forum discussions. This paper develops as a spiral: of ways of thinking, ways of questioning

and ways of doing in order to further inform ways of thinking, questioning and doing – philosophy, critique and practice.

Matters of society, culture and critique

For the purposes of discussion about aspects of designing, related to the stakeholders involved in learning space designing and their circumstances, it is useful to consider social and cultural dimensions in relational ways. Thus, the wider, global contexts of society and culture can be considered as *the ways things are*. Related to this encircling dimension, cultural practices can then be considered as *the ways things are done,* and in an immediate local context, the cultural practices of school, home, organisations and workplaces can be considered as *the ways things are done around here. The ways things are done* operates as the sandwiched-in-between dimension, nudging and impacting the characteristics and effects of the adjacent dimensions. This integrated image enables cultural matters, ethics and practices of close at hand contexts to be kept in relational view within wider organisation/institution and global milieu.

Associated with these ideas of culture and cultural practice is a question of critique: *who and what is valued here*? (Popkewitz and Fendler, 1999). Such a critical theorist's question can be used to evaluate, interrogate and make judgements about, for example, the constitution of school policy and documentation, quality and relevance of pedagogical practices, relationships of spaces and learning and the processes of designing, in order to come to terms with the taken-for-grantedness of the shaped and shaping *ways things are done around here*. The purpose of such probing thinking is to expose what is assumed in and through relevant social and

cultural practices, in order to understand how it is that practices and spaces are as they are and to enable participant agency in transforming possibilities.

Introduction

The synopses of papers and sessions for ASLA Online III 2008 *Under Construction: A World Without Walls* are alive with online and digital-worldliness, re-announcing the continually changing environments of learning in which we participate as learners and teachers. The conference paper abstracts also reveal the facets of pull-and-tug across the expansive potential of digital-online worlds, the challenges in the waves of hardware-software invasion and the need for participants in these worlds to be capable, fluent, literate, collaborative and wise enough to undertake learning journeys of almost galactic promise.

Conference orientation ….

The conference outline draws on the *flat world* rendition taken up somewhat provocatively by Thomas Friedman (2006) who, like Bill Mitchell (1996; 2000), provides galloping renditions of the ways in which so many dimensions of our work and lives are transformed by the telecommunications revolution. Both writers pursue the notion of *flatness*, which is a curious idea to sustain in the face of the multi-dimensional *tangled rhizome* character of digital-online experiences (Dodge and Kitchen, 2001, 63; Kapitzke, 2006 xxxi).

Mitchell (2000, 3) asserts that traditionally understood urban landscapes are *flatlining* under the onslaught of *bits,* which produce a transformed, recombined, network-mediated metropolis of the digital-electronic era. Friedman (2006) explores 10

flattening forces related to the cyber-unravelling of the borders and barriers of social and economic work-network communication. The connections between architectural materiality and virtuality are maintained in Mitchell's (1996; 2000) comprehensively referenced discussions by linking the technologies of telepresence with those physical representations of spaces which, we imagine, will continue to accommodate participants in wired worlds. These relationships are demonstrated in his discussion couplings e.g. *Bookstores / Bitstore; Hospitals / Telemedicine; At Home / @ Home; Stacks / Servers* (Mitchell,1996)*.* Such juxtaposed physical/virtual dimensions – *recombinant* spaces - are a salutary reminder of the challenges facing educators in designing learning spaces in between digital-onlineness and the material constituents of the learning spaces of schools.

Accommodating the electronic hardware and infrastructure so pivotal to digital-online learning is an acute challenge in many schools where the built spaces to house the required/desired electronic tools, were designed for the learning and teaching of earlier times. The collision of physical and digital-electronic worlds prompts hybrid performances of designing – in pedagogical approaches, in the development of learning experiences and in the creation of built spaces (Lundin et al, 2001).

Then there is the matter of 'bodies' – the corporeal entities to which we are hitched for our living and lifetimes, these material dimensions of our socially oriented and constructed selves, identities shaped through physical appearance, personality, character, ethics and current popular cultural dimensions. Our bodies anchor us to space and place related to society, culture, geography, economy, politics, and science and in spite of online lives, telepresence and electronic amplification, our physical

selves defy being left behind. Dodge and Kitchin (2001) argue that we are rendered only partly footloose by digital-online technologies. It could be said that we stand on the geographic windowsill of online spaces and experiences, augmented by our telecommunications devices of choice - one foot in a physical, material world, the other raised in anticipation. We remain *placed*.

Working with a notion of *recombinant architecture* signals a loosening of spatial connections between physical and digital-online environments. This concept also indicates the transformative calibre of designing approaches concerned with the creation of spaces where *bits meet bodies* to fulfil human needs and desires, while at the same time continuing to pursue those attributes we seek in physical spaces for our human comfort and amenity (Alexander, 1977; Mitchell, 1996, 105).

Problematising the interdependence of learners, learning and spaces?

It can be argued that inquiry into the designing of learning spaces begins with the learners with whom we are concerned and the contexts and sites of their learning experiences. A problem-based approach makes it possible to frame and consider the interdependence of the identities of learners, the character of learning experiences and the spaces and places of learning events which are conducted in increasingly digital-electronic environments:

- Who are the learners we acknowledge, hope for and seek to develop?

- What kinds of learning experiences do we value and implement to nourish the growth of such learners?

- What kinds of spaces are we designing to support such learners and learning?

(Elliott Burns, 2004).

Tugging at the tail of this approach is the rhetoric of hardware-software production and ICT popular punditry – *this is the way things really are* - which foreground the performance *hype* of the tools, sites and processes of digital-online worlds to infer that these are the chief consideration (Friedman, 2006). Assigning primacy to digital-electronic sites, products and processes as a prior consideration to the people concerned, has the effect of positioning learners and educators to be more driven by the tools of the age, than active in customising digital-online tools and processes to the advantage of purposeful, fulfilling learning and living. These circling elements of cultural influence deserve to be located in balanced tension among an array of interdependent pivots which are relevant to designing learning spaces offering rich experience options, digital-online and otherwise, in accord with visions and expectations for learners and learning.

Who and what is valued in the learning spaces of schools?

As a way of understanding the strength and value of this critical theorist's question, it may be instructive to make a brief, reflective diversion away from digital-online environments to evaluate a longstanding and perhaps taken-for-granted activity-space connection in schools. To do this we could consider the matter of *lunch*.

The idea of *lunch* conjures an array of meanings and experiences drawn from our lives and work. Societies, cultures, history and geography, literature and imagination are all brought to bear on the meanings associated with *lunch*. Descriptors and qualifiers operate to frame *lunch* to produce a parade of meanings within our experiences: picnic, box, basket, brown-bag, long, business, school, play, working,

before, after, hour, mid-week, weekend, quick, ploughman's, buffet, counter, desk –
and so it goes. A feature of many of these and other examples is a sense of social
occasion, of community, of being with and sharing a meal in the company of others.
Situating each example in a physical space adds to the meaning and expands the
narratives of *lunching* experiences.

If we apply the question *who and what is valued here* to the physically located
experiences of *lunch* there are opportunities to see more deeply inside these
occasions, to expose the social relationships surrounding and embedded in *lunch* and
to question how it is that these spaces of *lunching* are as they are. For example,
refectory, pub, greasy-spoon and restaurant, imply layers of social relationships and
coalesce to invoke visual, kinaesthetic and gustatory memory.

Focusing more closely on *who and what is valued here?* - related to the example of
students' *school lunch* spaces - prompts other questions: How can we see inside and
interpret these spaces of *lunch*? What ambience, sociality, spatiality is evident in these
lunching spaces? How are these spaces appointed/furnished for those who are
lunching? What relationships are possible in these spaces? What behaviours do these
spaces encourage? How do stakeholders – educators, students, architects, and those
concerned with education facility planning exert influences on the designing of spaces
for *lunch*?

What do the *lunch* spaces of schools say about *who and what is valued here?* Perhaps
we only need to call on the image of the school canteens of our experience and the
spaces where students gather individually and in groups to *lunch*. Who and what is
valued in the absence or presence and quality of furniture, the styles of flooring,

aspects of light, temperature, air quality, noise levels, the people-to-space ratios, food preparation areas and facilities, the maintenance program? How does this exploration highlight the ways in which such attributes are emphasised, taken-for-granted, overlooked and ignored in the social spaces and engagement of students – *out to lunch* (Elliott Burns, 2005).

Taking bearings and making judgements: *hybrid, recombinant* learning spaces

If we bring the critical theorist's question to bear similarly on the learning and information spaces of schools, both physical and digital-online dimensions, how are learner identities, valued discourses of learning, appropriate pedagogical purposes and practices answered in these spaces? Who and what is valued here? Following are three brief examples related to dimensions of literacy, philosophy in practice and designing as elements for contemplation prior to the conference forum.

Literacies and online worlds …

Educator-researchers such as Lankshear, Snyder and Green (2001, 30) concentrate on the interdependent o*perational*, *cultural* and *critical* dimensions of literacy for learning in digital-online worlds, with particular reference to schools. Their discussion emerges from the Digital Rhetorics project (1997), an Australian study which mapped emerging literacies of the digital age and called attention to technology as social practice.

The *operational* dimension is concerned with the tools and processes of digital-online learning texts, with being able to operate within the language and language practices of digital-online worlds, for example Web2.0 modes and spaces. Conscious

capability in the *cultural* dimension includes understanding what it means to participate in particular digital-online environments and the appropriateness and inappropriateness of particular ways of *reading* and *writing*. The *critical* dimension involves being wide-awake to the constructedness and selectiveness of literacy practices, wherein some values, purposes and perspectives are included and some are excluded. This three-dimensional model draws attention to *contexts and their significance in terms of power* and has the capacity to inform learning space designing decisions to support learners' development of mature literacy practices (Lankshear, Snyder & Green, 2001, 32).

With respect to digital-online worlds, the work of Lankshear et al (2001) would benefit from the augmentation of spatial dimensions. Sinclair (2007) takes up matters of space through the development of designing guidelines for a Commons 2.0. - a layered space in which bookstacks coexist with portable electronic devices in spaces furnished with a wide variety of seating options, inspiring multi media displays and realia installations – *recombinant architecture* in practice in the integration of both familiar and digital-online functions . The Commons 2.0 reflects human-centred qualities in materials and layout and uses the flexibility and mobility of wireless networks to promote self-governing collaboration among students. Applying the critique of *who and what is valued here* such spaces can be seen to have relational attributes with the potential to respect individuals and groups, promote collaborative and independent options and embed relevant technologies.

Clark and Maher (2001; 2003; 2005) trace their journey of developing human centred spaces in *virtual learning environments*. A pivot for their designing of digital-online

spaces has been the evolving of *sense of place*, moving from static digital-online environments and closed-content information package approaches with little sense of place or of others in the place/space, to the connectedness and collegiate learning encounters now incorporated in virtual design studios and virtual campus environments. In the designing of online spaces Clarke and Maher (2005) emphasise learners, the pedagogical significance of learning in communities, of collaboration and of the ways in which virtual environments need to be designed in order to create context, situation and *place* in accord with their constructivist philosophies and practices.

Philosophy in practice …. Reggio Emilia

Dahlberg and Moss (2006) draw attention to ideas of education-as-production which emphasise the *business* of education as distinct from the business of *education*. They caution against commodity mindsets which reduce education to a complex of products and services. In the case of schools, such perspectives position learners and their parents as self-focused consumers of the education product. In their turn educators are cast as technical operators and schools are judged on their capacity to reproduce knowledge and identity.

The northern Italian municipal schools of Reggio Emilia are identified as evolving examples of resistance to *education as product* (Rinaldi, 2006). A determination to focus on learners as interdependent members of communities of difference – younger and older – and on education as a process of becoming, are aspects used to characterise the Reggio Emilia schools as places of encounter, connection and dialogue. These schools are shaped by choices of values and ethics by educators who

describe themselves as being in dialogue across the community *in a journey of organic, seasonal, permanent, evolutionary research,* designing and constructing the spaces and experiences of childhood learning. This could be described as a form of *recombinant* architecture which fosters communication and is itself communication (Rinaldi, 2006, 2; 78; 137).

In the Reggio Emilia endeavour, the built spaces of the schools are regarded as pedagogical design projects, as conversations between the language of learning and teaching and the language of architecture. These conversations involve educators, learners, parents and community members and designer-architects. How might recombinant approaches work in conjunction with the concept of *environment as teacher*, emphasising the designing of spaces for both learners and teachers which:

- encourage collaboration and value individual work-play;
- are both opaque and transparent - respecting identity and privacy;
- enable participants including parents to be constructive contributors to the overall learning project in the school;
- stimulate enquiry, performance, creativity, sensory responses and communication;
- use materials to foster welcoming, comfort and amenity and to maintain inside-outside orientation.

(Rinaldi, 2006, 82-87).

In pursuing effective synergy among learners, pedagogies and the designing of learning spaces educators can benefit from conceptual and practical models such as that of Tom Heath's Values, Activities, Site/System and Technology schema (1989).

VAST: potential as a designing heuristic

Tom Heath's (1989:17) designing heuristic **VAST,** acts as a critical-interpretive lens
to provide a cohesive focus in designing enterprises. Drawing on the work of John
Zeisel (1984), Heath (1989) describes the underpinning thesis of **VAST** as: *people
have **V**alues, in relation to aspects [**A**ctivities] of buildings [**S**ite/**S**ystem] which must
be expressed in built form [**T**echnology].*

Table 1. Designing Heuristic: Heath, T. 1989. *Introduction to design theory.* Brisbane: Queensland
University of Technology.

People have values, in relation to aspects of buildings which must be expressed in the built forms			
Values	**Activities**	**Site/System**	**Technology**
System of human relationships	System of human activity	System to support human activity	Production of the built space system
Feelings Attitudes Beliefs Customs Laws	Participants/actors Characteristics Relationships Materials/tools Actions: sequence outputs Action effects Conditions Relative dimensions Support services Risks	Location: in context Context: relationships Access: main/limitations Aspect: orientation Prospect: outlook Climate: seasonal Micro-climate Character: site & context Technology infrastructure	Structure Skin Climate control Subdivision Services Finishes
Representing values (through): User narratives Social observation Cultural practices Speech protocols Exemplars: 'like'	Representing activities (through): Adjacency matrices Activity connections People Flow diagrams Bubble diagrams Room data Equipment-Space Time lapse photos Video: 'in action' Computer graphics	Representing site/system (through): Location plan: relational Photography: qualitative Annotated site plan Overlay: integration Model: 3D Computer graphics	Representing technology (through): Photographs Installations Sections & elevations Detail of aspects

The VAST elements scaffold the exploration of systems of human relationships and human activity in association with the surrounding systems which support human activity within built spaces. Heath describes designing as a *'specialised kind of problem solving'* involving strategic and tactical approaches, and encourages designers to apply the VAST heuristic critically and with a certain amount of *'free floating anxiety'* (Heath 1989:17). The VAST elements take account of the sites, social settings, locales and broader social systems which influence built space contexts. This interrogative approach is rich enough to consider dynamic interplay of current digital-online and physical built space contexts.

Heath's (1989) VAST heuristic can be used as both an evaluative and a designing framework. The *representing* columns in Table 1 outline the array of research data options appropriate to interrogating and designing spaces with respect to the aspects of human values, activities, sites/systems and technology. The VAST heuristic invites significant educator contributions to designing conversations in partnership with designer-architects and other stakeholders. Designing the sites of practice for educators and learners deserves the close involvement of those most familiar with the systems of human relationships and human activities associated with the learning spaces of libraries, classrooms, and other specialist education facilities.

Dialogue among companions on research journeys … sites and sources

The following sites and sources provide stimulus for reflection and research using the critical theorist's question, *who and what is valued here,* related to consideration of contextual cultural practices - *the ways things are done around here.*

- *Designing spaces for effective learning case studies: video case studies – 21st century learning and teaching*

http://www.jisc.ac.uk/whatwedo/programmes/elearning_innovation/eli_learningspaces_casestudies.aspx

The UK Joint Information Systems Committee (JISC) website offers access to a selection of video case studies to demonstrate the research focused joint venture designing of a range of library and learning spaces. Most examples relate to tertiary institutions. The value in a number of the video examples lies in the discussion about learners and learning which guided designing decisions reported in the case studies. The integration of digital-online technologies is visibly innovative in some cases. In other cases the spaces are re-designed and adapted older spaces and as such are worthwhile examples for schools where new construction is not an immediate option.

- *Jeffrey Lackney's 33 Principles of Educational Design*

http://schoolstudio.engr.wisc.edu/33principles.html

Although this site is not new, Lackney's development of designing principles using learning space research is a worthwhile resource for educators. This is not to say that the principles presented are recommended as design templates for universal application. The model encourages educators as researchers to assemble – in a cycle of original, ongoing and seasonal research - data relevant to their context and to develop principles to inform learning space designing decisions.

- Nair, P., and R. Fielding. 2005. *The language of school design: design patterns for 21st century schools*. Minneapolis, MN: DesignShare.

This text has enjoyed wide circulation and presents a hybrid approach to designing learning spaces. The writers use the *pattern language* model of Christopher Alexander (1977) as a structure for the matching of pedagogical approaches with the spaces, space relationships and clustering, amenities and fitting out of school learning spaces. Prakash Nair and Randall Fielding are principals of FieldingNair and key contributors

to DesignShare. The school building projects exhibited on both websites indicate their international involvement.

Joining the conversation …

Council of Education Facility Planners International

http://www.cefpi.org/ - select Australasia Region from the main page.

Research sponsored by CEFPI is largely focused on the impacts of school buildings and facilities on students and their learning.

CEFPI was founded in the US during the 1920s. Membership is open to individuals, organisations and services concerned with the designing and building of school facilities. The Australian Chapter was established in 2000 and extended to the Australasian Region in 2005-6. There are chapters in several Australian states. The 2008 conference *Radical learnings: abandonment and regeneration* was held in Melbourne 28 – 30 May. The 2009 conference will be conducted in collaboration with the Australian Council for Educational Leaders. The conference, titled *Closing the Learning Gap: environments making a difference* will be held on 24 – 26 September at the Darwin Convention Centre. The CEFPI Australasian Chapter website has conference papers 2001 to the present. www.cefpi.org

Questioning …

- How are our own philosophies, theoretical positions, belief frameworks and everyday practices formed and re-formed around digital-online phenomena?
- What is overlooked, disregarded or made invisible in the reconfiguring of lives in digital-online worlds?

- How might we ask critical questions about these matters to inform designing decisions?

In closing …

Designing spaces for learning and living in schools in digital-online times deserves the close participation of educators and learners in designing processes and projects, in company with designer-architects and education facility planners. This paper proposes that such designing partnerships are enhanced by considered critique, reference to research, reflective evaluation, consciousness of social and cultural practices and informed alignment with considered values, ethics-in-practice and pedagogy.

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