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Learning Space Design and the Negotiation of Power

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Lay Summary

Teachers have traditionally lacked power in the decision-making process with regards to significant learning space design or transformation projects in their schools. Classroom teachers could also benefit from more practical tools and knowledge regarding learning space design. Drawing on a few disciplines or theoretical approaches, from architecture to learning space design to theories on space and power, this thesis examines how people negotiate power, or contest space, in the context of designing or transforming a learning space in the secondary section of an international school. At the heart of the thesis is a small-scale transformation project—the creation of a 21st-century information and communications technology (ICT) classroom—that I led at my international school, and that lasted just over two years. The project involved various teachers, administrators, and students at different stages of the project, which was meant to bring about change in our school, and offer teachers, in particular, a sense of empowerment.

This theme of space and power fits into the wider context of international schools as, arguably, spaces of privilege that are associated with a globally mobile clientele who can be considered part of what is known as the transnational capitalist class (TCC). One can see an increasing trend for large-scale or grand building projects at some international schools, and these buildings reinforce the idea that international schools are spaces of privilege that symbolise the power and status of the TCC. The findings of this thesis suggest that what matters most to students and teachers are the everyday spaces of education. The findings also suggest that the design of learning spaces can influence students' experience of learning and their sense of place. Small-scale, local transformation projects have the potential to empower teachers, and address the unique educational experiences of globally-mobile international school students.

Abstract

Although a growing body of research directly relates learning space design to student experience, it is insufficiently taken forward in practice, particularly with respect to the negotiation of power. This thesis argues for interweaving the practical design benefits of Alexander's (1977) pattern language theory with a sociomaterial approach, specifically addressing how the material and social co-construct space. At the centre of my research is the Media Hub project, the creation and ongoing transformation of an ICT classroom in an international secondary school over a three-year period. My research questions investigate, first, the negotiation of power in the context of transforming a learning space, and, second, how spatial configuration can influence students' experience of learning and perceptions of place. I adopt a participatory action research approach, focusing on interviews with both students and teachers, classroom observations, as well as visual ethnographic data collection that captures the everyday things of education, from chairs and tables to posters and books.

In the context of international schools as spaces of privilege, I first explore wider issues of space and power, drawing on Sklair's (2005) criticism of the relationship between iconic architecture and the transnational capitalist class (TCC). I then investigate how users of the Media Hub negotiated power and competed for space throughout its development. I also examine how spatial configuration and the materiality of space influenced both pedagogy and student experience, recognizing that the intended design of a learning space can be at odds with its actual use. I conclude by considering the value of small-scale projects like the Media Hub as a counterpoint to the increasing sameness of international school design. The findings of this thesis could have implications for educators seeking to implement, and critically examine, learning space design and transformation projects.

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Chapter 1: Introduction

This research aims to conduct a structured inquiry informed by sociomaterial approaches into how the spatial configuration of a learning space influences power relations, as well as students' experience of learning and perceptions of place. The educational context is the secondary section of an international school, and the project centres on the creation and ongoing transformation of an information and communications technology (ICT) learning space. Called the *Media Hub*, this space was the result of a participatory action research project that I initiated and led for just over two years. Within the framework of ethnographic research, I focus on: interviews with students and teachers, particularly those who were regular users of the space; formal and informal observations of activity in the space during both timetabled lessons and other periods throughout the day; and visual ethnographic data that capture the everyday *things* of education, from chairs and tables to posters and books. My two research questions were:

1. How is power articulated and negotiated in the context of the transformation of an ICT learning space (Media Hub) through a participatory action research project?

2. To what extent does the Media Hub's spatial configuration[1] influence students' perceptions of place and experience of learning?

A nuanced and critical reading of learning spaces must consider equally the human and the non-human; that is, the objects and things that act upon or with humans—the material forces that intertwine with human actors to co-construct space. The sociomaterial arena of spatiality foregrounds the *material* and provides a lens through which one can examine how people negotiate power in the context of classrooms, learning spaces, or even learning space transformation projects like the Media Hub. At the same time, and by recognising the complexity of learning spaces and learning space design, I have drawn on different disciplines and theoretical perspectives in this thesis: learning space design, architecture and architectural theory, the sociomaterial arena of spatiality, as well as theories on place and placelessness; however, my conceptual framework is an interweaving of sociomaterial theory

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[1] For the purpose of this thesis, I use the term *spatial configuration* synonymously (and interchangeably) with *built environment*, for both terms can encompass physical space, geometric order, and specific design features; however, I sometimes make the distinction of how the built environment includes inherited structural or fixed architectural features of a space that cannot be reconfigured without major construction.

with the practical design benefits of Alexander, Ishikwawa, and Silverstein's (1977) pattern language theory.

One of my principal goals for the Media Hub was to create a well-designed learning space, drawing on contemporary findings and recommendations in the research. Of course, one cannot expect universal agreement on what constitutes a well-designed learning space, let alone a well-designed *space*. The design of learning spaces will always be subject to architectural, social, and political influences. A current and powerful narrative (which one might argue is the dominant narrative) in education revolves around data—the measurement of outcomes and learning. Unfortunately, this focus on measuring outcomes can leave little or no room for valuing the *experience* of learning or how one feels in a learning space. Beyond creating a well-designed learning space, I also wanted the Media Hub to provide a sense of vitality or life, and have the ability to enchant—subjective experiences, yes, but perhaps also subjective experiences that might be shared by a broad range of students.

I was particularly inspired by the work of British architect Christopher Alexander, who developed a pattern language for the design of space. Central to his architectural theories is the concept of the *life* of a space, and he bemoans the ugly and lifeless building environments we have created since the 1950s (Alexander, 2002, p. 349). Although his later theories, with specific methods for finding or creating this life in a given space, have met with significant criticism, he is not the only architect to consider this concept of the life of a space. Gehl (2010), too, in his work on urban planning, argues for creating spaces that evoke a sense of life. (Gehl's most notable success was his contribution to the pedestrian-friendly transformation of Copenhagen's city centre.) Gehl (2010) argues that the planning process prioritizes buildings over life; instead, the priority should be "first life, then space, then buildings," a process that operates "from below and inside" rather than "from above and outside" (p. 198). One could argue that learning space design rarely benefits from such a "below and inside" process, which would mean a process driven by teachers and even students. Gehl (2010) continues:

> The life-space-buildings order is not an innovation: what is new is modernism and modern drawing-board planning using the reverse order. Modernism has only held sway for a period of 60 or 70 years, precisely the period in which the human dimension has been seriously neglected. (p. 198)

This respect for the "human dimension," and the related *life* of a space, I thought, could also guide the design or transformation of learning spaces, as was the case with the Media Hub. A growing body of research points to the influence of the built environment on learning, social relations, and well-being. In practice, though, how students perceive or feel in a space is rarely given the same attention as which textbook to use or how much homework to assign. Often, attention to educational spaces is at the whole-school level, represented by a new or noteworthy building project; however, a commitment to students' learning experience and perceptions of place requires a commitment to valuing local transformations. This thesis aims to draw attention to the value of such local transformation projects like the Media Hub. Local, or small-"t" transformations[2] (Horton & Kraftl, 2012), could serve as a counterpoint to what appears like an increasing trend for visually impressive, large-"T" Transformation and building projects at international schools. In the context of international schools as spaces of privilege, then, I will explore wider issues of space and power, drawing on Sklair's (2005, 2010) criticism of the relationship between iconic architecture and the transnational capitalist class (TCC).

Thesis summary

Chapter 2, *Literature Review*, begins with an overview of spatial theory, a sociomaterial arena. I focus on the materiality of space and the value of sociomaterial research and perspectives, which provide a way to understand and interpret the contestation of space, how spaces become learning spaces, and the way in which "space and place emerge through active material practices" (Massey, 2005/2014, p. 118). I also examine ideas on space and power, such as Foucault's (1977/1995) influential work on the control and disciplining of bodies. Next, I review Sklair 's (2005, 2010) research on the relationship between iconic architecture and the transnational capitalist class, and then apply these perspectives to the design of some international schools. Given the specific context of this spatial transformation project taking place in an international school, I also examine the literature (albeit a relatively new and small field of research) on international schools and third culture kids (TCKs), which sets up the potential implications a space has for these students' perceptions of place.

The second part of the literature review chapter looks at architectural space in the context of schools and the built environment before turning to specific elements of learning space

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[2] Horton and Kraftl (2012) use the terms "lowercase-'t' transformation" and "uppercase-'T' Transformations."

design. Because the Media Hub project adopted a number of contemporary ideas and recommendations in the literature on learning space design, I will attempt to show what is, to some degree, a consensus for certain approaches to learning space design. Of course, these approaches, or recommendations, are very much Western approaches to education and space. In addition, I will argue, the recommendations are, themselves, kinds of *patterns* in that they are meant to be replicated in schools in numerous countries for specific pedagogical purposes. I will return to this concept of patterns, of course, with a focus on Alexander et al.'s (1977) pattern language theory in chapter 3, in which I present my conceptual framework.

I conclude the literature review by briefly considering the influence of the current narrative of 21st-century learning spaces, and what such spaces purport to be or offer. This narrative is a frequent refrain in both the literature on learning space design and the wider discussions on education; its very nature is hypothetical—future-oriented—and often couched in vague terms instead of providing specific and practical solutions. A critical examination of the ideas behind 21st-century learning spaces, I will argue, tends to reveal some not unfamiliar 20th century patterns. Finally, I examine the potential role of the teacher in learning space design—the limits and possibilities afforded to classroom teachers, and what such teachers could perhaps bring to spatial transformation projects in their own schools.

In chapter 3, *Conceptual Framework*, I make the case for interweaving Alexander's (1977) pattern language theory with sociomaterial approaches to space. After exploring the concept and expression of a pattern, and its relation to an overall pattern language, I turn to the literature in order to show the influence and limitations of Alexander's theory. Next, I connect pattern language theory with learning space design, showing how patterns have been—and continue to be—applied in practice, whether implicitly or explicitly. Alexander's pattern language, I will argue, offers practical guidance and solutions for creating or transforming classrooms and other learning spaces. The patterns are infinitely variable and one can create original patterns when forming one's own pattern language for the design of buildings or spaces. Patterns also consider the social forces inherent in any space and offer a solution to conflicting forces, Alexander et al. (1977) argue, such as the need for semi-privacy within a larger communal space (p. 829). Still, the patterns cannot anticipate the unforeseen social forces that are bound up in the materiality of space, including the taken-for-granted and mundane *things* or objects of education. Such sociomaterial assemblages can disrupt or challenge the purpose of the patterns. The intended design of a learning space, in

other words, can be at odds with its actual use (see chapter 6). Nor do the patterns necessarily account for the complex ways in which people negotiate power in the context of a learning space, which, in the case of the Media Hub, occurred from its inception to its on-going transformation, and throughout its everyday use. For these reasons, I will argue, sociomaterial approaches should be interwoven with pattern language-influenced learning space design for a richer understanding of a spatial transformation project.

In chapter 4, I present my research design. I used a participatory action research (PAR) approach as part of the wider ethnographic methodology that drew primarily on interviews with users of the space, observations of user activity there, and other visual ethnographic methods charting the materiality of the Media Hub. This visual data helped reveal the material force—or agency—of everyday objects within the space. To remind, the professional context is an international school where I was (and still am) a full-time teacher, and also the project leader for the Media Hub. This dual role had implications for data collection and my role as a researcher in general. Naturally, the main participants in my study were students and teachers, and other key colleagues who were involved in some way with the Media Hub's origins or development. Challenges to data collection grew out of my multiple roles and responsibilities at the time: full-time teacher, leader of the Media Hub project, and, of course, researcher, which made for an immensely busy initial two years. I also touch on the two-year sabbatical that I took after the second academic year of the Media Hub's existence, and consider what implications that absence had for the PAR approach and the evolution of the Media Hub.

Chapter 5, *International Schools and Iconic Architecture*, establishes the wider context of the relationship between architecture and power, how international schools can convey their status—as members of the transnational capitalist class (TCC)—through grand, or iconic, building projects. I adopt a visual analysis of some international school spaces, investigating how status and power can also be projected through branding and cross-branding techniques, which one finds within the schools themselves, online, or even in semi-public places like train stations and airports. Ultimately, I attempt to show how such expressions of iconicity situate international schools within Sklair's (2005) model of the transnational capitalist class (TCC), a focus or line of inquiry that does not appear to have been explored in the literature.

Chapter 6, *Competition for the Space*, explores the initial and behind-the-scenes competition for the space in the early stages of the Media Hub's development, and how notions of departmental ownership developed. I examine how materiality and presence contributed to this perceived ownership of the space, with some mundane or taken-for-granted objects exhibiting particular force. The ongoing contestation of space and the negotiation of power were also expressed through spatial metaphors, the material force of the timetable, and the tension between the space's design and its actual use. Some teachers and departments had critical views of how other teachers or departments were using the space, which reflected the complexity of an international school, not just because it has teachers from a range of cultural backgrounds but also because our school offers a francophone curriculum (stream) in secondary school, in addition to the International Baccalaureate. As a result, different pedagogical perspectives—as informed by curricula, cultural background, or professional experience—contributed to the contestation of space.

Chapter 7, *Patterns and Negotiating Power*, explores how the negotiation of power related to a few key design patterns in the Media Hub: the CAMPFIRE, COSY SITTING CORNER, and MEETING CORNER[3]. I apply a sociomaterial reading to these patterns, tracing their development—or disruption—as related to the materiality of space and the agency of objects. These patterns, crucially, underpinned distinct learning zones in the Media Hub. At the same time, though, both the patterns and learning zones became bound up in the negotiation of power, sometimes representing teacher control and discipline of students, at other times student resistance to such expressions of teacher power.

Chapter 8, *The Value of Local Transformations*, looks at how the Media Hub, a small-"t" transformation project incorporating a pattern language design, had implications for students' experience of learning and perceptions of place. I first examine the significance of the Media Hub's appearance or aesthetic, such as its *cool factor*, a theme that emerged in responses by a number of users, and in students' initial reaction to colour, light, and modernity. Next, I consider how some patterns—in relation to the overall design of the Media Hub—contributed to reduced density, creating a sense of spaciousness, a welcome feeling for a number of users. The spatial configuration and design choices also had implications for student productivity,

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[3] I emulate Alexander et al.'s (1977) typographic style of using uppercase letters of a smaller font to clearly denote patterns for the reader.

another facet of their experience of learning in the space. I also provide a detailed analysis of the PODS pattern, which had implications for the kind of learning possible, as well as students' apparent preference for a learning experience connected with communication and collaboration. Finally, I consider some teachers' perspective of the efficacy or success of the PODS pattern, and how these perspectives might also align with those of the students.

I then focus on students' perceptions of place, framed primarily by one student's artistic vision for the downstairs region of the Media Hub. I also highlight the value of the consultative process—as part of the PAR approach—that I adopted for this small-"t" transformation project. The data suggested that students might prefer a learning space that is comfortable, cosy, and with which they feel a connection or sense of belonging. For some students, the connection touched on a sense of ownership, which had its roots in their reason for being in the Media Hub, or simply because of frequenting the space. These students' responses could also be interpreted as them having a sense of place. The data appeared to show how perceptions of place—the connection with everyday classroom spaces—has significance for students' school experience, and maybe especially for TCKs, who might change schools several times throughout their primary and secondary education.

Narrative opening: the context of the research

Professional context

I work in the secondary section of *International School Name*, which has a population of approximately nine hundred and fifty students in Years 7-13. I have decided to anonymise, as much as possible, the school itself, which of course provides an extra layer of anonymity for the participants in this study. In chapter 5, where I take a critical look at the relationship between the TCC and governing boards of three international schools, I omitted a similar analysis of my own school, given that I am still employed there. Overall, I wanted to avoid any potential conflicts, or any perception that I was being overly critical of my colleagues or school or members of the school community (which I am not) through my critique of the relationship between iconicity, international schools, and the TCC.

The secondary school offers an English-language or French-language curriculum stream. After middle school, one senior stream follows the Cambridge IGCSE curriculum for two years before moving on to the International Baccalaureate programme for the final two years

of secondary school; the other stream follows a French curriculum, which begins in Year 10, covering the final four years of high school. This francophone section is in the minority, with, on average, 60 students enrolled across the four-year programme. After joining the school in August of 2009 as a full-time teacher, I taught Years 7-13 English (in the English stream) for six years until the start of my two-year sabbatical in September 2014, at which point the Media Hub project had been underway for two years and mostly completed. In those two years before the sabbatical, importantly, I was timetabled in the Media Hub for eight lessons per week because I had co-created and taught the Video & Animation course in Years 10 and 11 as part of the information technology (IT) department. This course was related to the creation of the Media Hub and also helped to define the space.

Not unlike other (private) international schools in many countries, the entire campus is surrounded by a security fence, approximately two metres high, with only a few entry points, so a visitor's first experience upon arriving at the secondary school area, once classes have started in the morning, is a small entry gate cut into the slate-grey industrial-grade metal fence. One must push an intercom button just below a familiar fish eye of a security camera. Entry is signalled by a loud buzzing as the gate is remotely unlocked by the receptionist. (This gate and the sliding gate for delivery vehicles immediately beside it, as well as the other entry point, are left open in the morning when students arrive, with private security guards and, sometimes, one or two of the principals present.) From this gate, a wide path emerges into the heart of the campus, a grass-covered quad with a large tree in its centre; small benches sit in a jagged circle under the shade of the tree's branches. Bounded on one side by a grove of enormous chestnut trees that straddle a small meandering stream, the quad is overlooked by three buildings from three different eras and, unsurprisingly, three strikingly different architectural styles. On the right, a stunning 100-year-old stone building with pitched roof, the campus' original building. Sixty meters ahead, one sees a large rectangular building from the early 1990s, its concrete façade broken by blue metal trim around each of the dozens of identical classroom windows across two storeys. Atop, and running the width of the left half of the building, sits the library (an additional two storeys), with large glass windows and a glass roof interwoven with thin strips of metal. The right half of the building is only two storeys, with a horizontally-bisected cylindrical roof that looks to be made of corrugated tin.

But immediately on your left, only steps from the entry gate that just clanged shut behind you, is secondary reception, housed in a squat, three-storey 1960s concrete structure recently re-covered in chocolate-brown panelling. After you pass through the automatic sliding glass doors, sign in at the chest-high reception desk, receive a temporary identification badge (a sticker to wear upon your chest), you will pass through a set of glass doors (not automatic, and which display a sign instructing students that they cannot access reception this way or use the doors as a thoroughfare to classrooms). You are now in the first-floor corridor of the English department, coldly lit by fluorescent tubes. Along the wall, to the left, is a row of small lockers, in blue, stacked three levels high, almost to the ceiling. Walking on, you reach a dimly-lit intersection of sorts: to the left and right are exits to the outside—the one on the left for entry only, the one on the right for exit only, representing traffic control measures to avoid dangerous bottlenecks during the five-minute passing time between lessons.

Immediately in front of you is a concrete stairwell that would take you upstairs to the maths department (and above that to the music department). Instead, you pass to the left or right of the staircase, where the corridor on each side now narrows almost to a single-file width, with more blue lockers along the wall, as you attempt to avoid bumping into the backpacks of students crowded around a friend's waist-high locker, and almost stumble over another student you did not see crouched at a lower locker. The noise and activity right now, during a break between lessons, convey the immense energy of early adolescence. On the other side of the stairwell, you emerge into a 6m^2 foyer, a little too intensely lit, with perhaps dozens of students milling around, some playfully jostling, others languorously sitting on drab grey and garish green chairs. The space feels crowded, made more so by the low concrete ceiling with small recessed squares housing dozens of compact fluorescent lightbulbs (the spiral kind, like a pig's curly tail) blasting their cool brightness. The foyer is bounded by several English classrooms, each door with a rectangular window running most of the upper-length of one side. And, finally, in front of you, with a hospital-green metallic frame, are the two glass doors of the Media Hub.

With interactive whiteboards in every classroom, five full-class (twenty-four students) computer labs (in 2014) and several full-class sets of laptops for various departments in the senior school, one could say the school was, and still is, technologically rich (in addition to the school's overall affluence), and IT equipment is regularly updated. Still, the IT classrooms were very traditional in layout at the time that I proposed the Media Hub in early

February, 2012, and a few departments were sharing sets of laptops for computing tasks. For the English department, which initially had a tenuous claim to ownership of the Media Hub and intended to use it partially as a technology space, the laptop access was limited to one class set for the English department, an inadequate situation given that the department might have had eight classes simultaneously in session on two floors of the building. The Media Hub space—both before its inception and during its ongoing development—likely would have addressed these pedagogical and practical ICT needs of the English department.

Inspiration for the project

An increase in student numbers at our school sparked a move for the English department from its long-term home in one building to another building on campus that used to be for primary students. The space that would become the Media Hub had been the primary school's library, but in this first year of the campus reshuffle, it served only as a storage space, housing boxes of books and other materials belonging to the English department, including some archaic artefacts like audio cassettes, VHS cassettes, old curricular documents, and unused promotional material for educational programmes. A lack of available funding meant that the department could not develop the space immediately, as intended or hoped, as a space for integrating media and ICT in our English courses.

In addition to the aforementioned artefacts—material objects that symbolised, for the English department, ownership of the space—this two-floor space was stuffed with stacks of desks and chairs, and twenty-four desktop computers still in plastic wrapping; however, because it was a dormant space with no true established identity, members of the English department learned that other departments and groups were keen to have the space. The learning support department, for example, wanted to move their offices and workspace there. Increased pressure on campus facilities and spaces, after an expansion in student numbers, meant that the principal was considering converting the space for other groups or purposes. One plan he shared with me was to divide the classroom into two separate rooms by removing its central winding staircase. Upstairs would become a regular classroom, and downstairs would go to the Parent-Teacher Association (PTA). The English department, though, had understood that this former library space would be exclusively theirs, particularly because the space bordered all the English classrooms and supposedly had been part of the deal for moving to this building.

At the time, I had been a teacher in the middle and secondary school English department for four years. That same year, just after I had proposed transforming this former library into the Media Hub, I had also started teaching a Video & Animation course, offered through the IT department, which represented one-third of my teaching load. Still, my professional identity felt more like that of an English teacher, seeing as that had been my role in the school until that point. As a member of the English department, I wanted us to keep this space, for not only was it supposedly originally assigned to our department but also it seemed to have so much potential as a learning space. Given the intra-campus reshuffle and the uncertainty over this former-library space, a serendipitous situation arose which allowed me to propose a spatial transformation project, one that would become the centre of my PhD study and that I called the *Media Hub*. Moreover, this project would mean that the English department would not completely lose the space, an early example in my study in which my own bias and the theme of competition for space emerged. I was inspired to make the space useful, more interesting and dynamic, and set about figuring out how to accomplish that.

Although I proposed transforming the space into an information and communications technology (ICT) learning space for *all* students and departments, I knew that my proposal would keep the space in the realm of the English department, whose curriculum traditionally incorporates media projects and media studies. In this sense, my allegiance to the English department introduced an early bias. I also proposed that the Media Hub would meet some commonly-held tenets of 21st-century learning: it would be collaborative, technology rich, and dynamic, for example. I asked the head of IT, Craig, to join my proposal, for I believed that I needed his endorsement and collaboration to convince the principal. Also, Craig and I shared similar ideas about how our school needed to offer more creative and purposeful ICT learning opportunities. I decided to pitch the Media Hub as a 21st-century learning space, piggybacking on the popularity of that concept as a current trend in education. I hypothesized that this designation would help convince the principal to approve the project. I always believed that my proposal, although a symbolic loss of space for the English department, was the best solution at the time: the English department would still have use of a large and uniquely attractive space for integrating ICT, other departments and all students would have access, and I would have an exciting project for my own—and others'—professional development.

The main inspiration for becoming interested in learning space design, though, was that I discovered the work of the British architect and architectural theorist, Christopher Alexander. In *A Pattern Language,* Alexander, Ishikawa and Silverstein (1977) present a theory of archetypal building, or design *patterns* that provide adaptive solutions to problems that continually occur in our environment (p. x), comprising what they argue is a living language that "can make people feel alive and human" (p. xvii). Patterns such as DIFFERENT SIZED CHAIRS[4], SMALL WORK GROUPS, LIGHT ON TWO SIDES OF EVERY ROOM, POOLS OF LIGHT [see Appendix A for short explanations of each pattern], they argued, "are very much alive and evolving. In fact, if you like, each pattern may be looked upon as a hypothesis like one of the hypotheses of science" (p. xv). The Media Hub project and its ongoing transformation resembled a hypothesis inasmuch as I used and adapted a number of Alexander et al.'s (1977) patterns, testing how they might effectively overlap or interact with contemporary learning space design, and spatial theories.

Alexander et al.'s (1977) patterns deserve inclusion in present-day learning space design conversation, I will argue, because they provide practical solutions that can complement the small-scale and bottom-up learning space transformation projects—like the Media Hub—that educational policy discourse often undervalues (Horton & Kraftl, 2012, p. 129). These "locally-scaled material practices" tend to be better at inspiring user participation, instilling a sense of "*engagement* with and *emotional attachment* to the design process" unlike large-"T" Transformations (Horton & Kraftl, 2012, pp. 130, 132, emphasis in original). These responses speak to perceptions of place, a focus that is part of my wider theoretical approach centred on spatiality.

Theoretical approach

The overarching theoretical framework for this thesis is spatial theory, a sociomaterial arena that I use to investigate the relationship between space and power, particularly the negotiation of power and what implications that could have for students' experience of learning and perceptions of place. I examine sociomaterial perspectives on space in general and learning spaces specifically, drawing on the work of a number of prominent voices in the field, such as Tara Fenwick, Doreen Massey, Jane McGregor, Carrie Paechter, and Estrid Sørensen, voices

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[4] Again, I shall use the same font (uppercase letters, smaller type size) as Alexander et al. (1977) to clearly denote the names of patterns

to which I also return in my data analysis chapters in order to better contextualize some of my interpretations and findings.

A sociomaterial approach "foregrounds materiality in learning," and recognizes that the material—from texts to technologies to objects and bodies—is embedded in the social (Fenwick, Edwards & Sawchuck, 2011, p. vi). Similarly, Sørensen (2009) suggests that a sociomaterial inquiry aims to understand "how humans are enacted in the spatial arrangements" (p. 137). Fenwick (University of Stirling, 2016), in a short film produced by the University of Stirling, details what it means to research in socio-material ways:

> It's seeing whatever we might think of as social elements, meaning, symbols, interactions, certain elements of culture, with what we think of as material elements which would be everything to do with bodies and settings and objects and technologies and all sorts of things. And the focus is on the relations, as these elements, as these heterogeneous things assemble and reassemble to produce whatever we see as reality. (*Skills and Training: Methods Resources* section)

My research into the Media Hub looks at these relations between bodies and taken-for-granted objects and technologies, and how they assemble or reassemble to create the space—or at least what one thinks the space is or should be. To draw on Fenwick's (University of Stirling, 2016) final point above, this reality that we see—or think we see—might be merely what we wish to see. It may not be someone else's reality either. I examine how teachers and departments attempted to claim or control the Media Hub as a departmental or curriculum space, and how teachers and students negotiated power *within* the space as it continued to develop. I also contextualize the power struggles and competition for space that occurred in the Media Hub within wider issues of power and international schools, particularly in relation to the significance of large-"T" Transformation projects, an apparent trend for international schools. In chapter 5, *Iconicity and Iconic Architecture*, I critically examine such building and transformation projects, drawing primarily on Sklair's (2005, 2010, 2016) work on iconic architecture in relation to the transnational capitalist class (TCC). I will argue that iconic international school buildings are part of a wider assemblage of power that reinforce the status and globalising ambitions of the TCC.

After providing this wider context and a detailed visual analysis of international school spaces, I narrow in on the materiality of the Media Hub, an ICT learning space that drew on Alexander et al.'s (1977) pattern language theory for its design. I will show, both through my

review of the literature and my data analysis, how a pattern language theory can align with, and complement, contemporary learning space design approaches. Ultimately, though, Alexander et al.'s theory and much of the research on learning space design do not sufficiently consider the relationship between space and power—how power is expressed or negotiated in the context of space, and what implications such power struggles might have for the experience of learning, or the kind of learning space that can emerge. As Mulcahy (2012) notes,

> teaching and learning is constituted in assemblages of a social (e.g. professional socialisation, identity formation) and material kind (e.g. curriculum materials; teacher gesture, posture and embodied action). (p. 21)

Naturally, examples of the material would include a classroom's spatial configuration—practical considerations such as what furniture goes in a room and how it should be configured, or the impact of lighting and acoustical properties. Still, these seemingly straightforward practical considerations should be understood themselves as part of sociomaterial assemblages. Furniture choice, classroom layout, valuing good lighting and acoustics—each of these facets of the built environment is also bound up in the social, from professional background to school culture to current trends in education to how people act in the space.

I also consider some phenomenological perspectives on both space and place in an attempt to better understand how students responded to the Media Hub's spatial configuration and related atmosphere. My final data chapter, *The Value of Local Transformations*, returns to the context of third culture kids, a group who "are spending, or have spent, at least part of their childhood in countries and cultures other than their own" (Pollock & Van Reken, 2009, p. 3), and who usually attend private international schools—transnational spaces increasingly criticized for being enclaves for educating the global elite (Hayden, 2011, pp. 220-221). I will investigate if the Media Hub evokes a sense of place for its users, and consider to what extent such a response might symbolize a counterpoint to the increasing sameness, even placelessness, of iconic architectural projects at some international schools. These projects, of course, represent particular assemblages that reflect the broader power of the TCC as expressed through spaces of educational privilege.

Much of the challenge of the Media Hub project revolved around my dual role as project leader and ethnographic researcher. In addition to the pressure that this sometimes put on my professional responsibilities and social relations as a full-time teacher, the dual role meant that, like other people who used the space, I was often in the middle of power struggles and the contestation of space. These challenges call to mind Fenwick's (University of Stirling, 2016) reflections on sociomaterial research:

> …as a researcher, you are caught between your own views of what is going on, and informed by these kinds of questions of what are the material relations and how are things happening, with the people that you are with who have their own meanings. They can't help having meanings, and those keep threatening to impose themselves on the research. (*Skills and Training: Methods Resources* section)

With the Media Hub project, I had hoped that the adaptive spatial and material changes made at various stages, via a participatory action research approach (which I detail in chapter 4, *Research Design*), would result in an ICT learning space that better facilitated collaboration, movement, and even creativity. I also wanted to create a space that provided a sense of *place*. But my primary goal, which kept me inspired from the space's inception and throughout its various iterations, was to create a learning space that might also evoke a sense of joy, enchantment, and vitality. In other words, a space full of life, as Alexander (2002) has argued for, rather than merely an ICT space—of privilege—preoccupied with being *21st-century*.

Chapter 2: Literature Review

I begin this chapter by considering the role of sociomaterial research in education, focusing on the arena of spatial theory. I highlight the concept of assemblages and their implications for practice, particularly in relation to technologies, for the Media Hub was conceived and developed as an ICT learning space. I then apply sociomaterial perspectives to a critical examination of international schools as particular kinds of assemblages. Drawing on Sklair's (2005, 2010) criticism of the transnational capitalist class (TCC) and its use of iconic architecture to project power and promote its own agenda, I focus on the connection between iconicity and international schools, which includes the role of multinational corporations in the governance and funding of these schools. In chapter 5, *Iconicity and Iconic Architecture*, I will build on Sklair's iconicity argument by including a detailed visual analysis of how even the everyday spaces of a school, which can extend to digital spaces or public spaces, can be used to reaffirm the global power and prestige of the TCC through international school education.

Next, I provide some historical context on issues of space and power in education by looking at traditional school design. I bring together some prominent voices in the literature on learning space design in order to highlight prevalent and recommended design approaches, some of which appear to indicate a correlation between learning and well-being. I consider the human-scale spaces of (international) schools—classrooms, hallways, furniture—but still in the context of space and power. These smaller spaces *within* a school are ones that can conceivably be transformed by teachers and other stakeholders, without the help of architects, yet will still remain subject to an ongoing negotiation of power. The students in these everyday spaces of international schools are often referred to as third culture kids (TCKs), the children of globally mobile families. I examine the literature on TCKs and consider if their unique identity has implications for their perceptions of place. Finally, I attempt to map some of the recommended learning space design approaches onto Alexander et al.'s (1977) pattern language theory, showing how design *patterns*, in fact, already exist, even if they are not explicitly referred to as patterns. Moreover, these extant design patterns, sometimes echoes of Alexander et al.'s (1977) patterns, are often enmeshed with practice, bound up in sociomaterial contexts, and tend to remain unquestioned over time.

Just as the sociomaterial research rarely extends to the practical design considerations of learning spaces, much of the research on learning space design, particularly when framed in terms of recommendations for educators, lacks a theoretical consideration of how learning spaces—in spite of one's design intentions—are always open to change and contestation. Regarding education, Fenwick et al. (2011) have noted the "many gaps and opportunities in sociomaterial theory," but also call on researchers "to experiment with new theoretical contributions" (p. 183). By way of concluding my review of the literature, I provide a separate chapter centred on my conceptual framework. In it, I present Alexander et al.'s (1977) pattern language design theory, which I will detail and interrogate, showing both its benefits and limitations. Because Alexander et al.'s (1977) theory does not sufficiently address how people negotiate power and how spaces are always subject to contestation, I will argue for interweaving a sociomaterial approach *with* a pattern language design approach, which could provide a theoretical *and* practical guide for educators wishing to create and critically examine a learning space design or transformation project.

Sociomaterial perspectives: space and power

> To be human requires sharing with nonhumans. (Latour, 2004, p. 51)

Fenwick and Landri (2012) note the slow emergence in the last two decades of sociomaterial studies in education (p. 1). A theoretical underpinning is that space, rather than being merely a system of organisation or geometry, is constructed through social processes, which in turn give space meaning (Brooks, Fuller & Waters, 2012, p. 2). A sociomaterial approach, Massey (2005/2014) argues, sets out to understand how space is "always under construction" and "a product of relations-between, relations which are necessarily embedded material practices" (p. 9). For Fenwick et al. (2011), sociomaterial approaches

> promote methods by which to recognize and trace the multifarious struggles, negotiations and accommodations whose effects constitute the 'things' in education: students, teachers, learning activities and spaces, knowledge representations such as texts, pedagogy, curriculum content, and so forth. (p. 2)

Sørensen (2009) argues that the diverse ways in which the material is bound up with social interaction require more theorizing and examination (p. 6). Similarly, Fenwick and Landri (2012) argue:

The problem with educational views that are overly preoccupied with developing a particular kind of human subject is that materials – including human material – become invisible or subordinate to human cognition and agency. (p. 1)

The strength of a sociomaterial approach, Fenwick (University of Stirling, 2016) claims, is that it has a "focus on describing, it's stories about how things come together. It's not trying to establish theory of why the world is the way it is, it's about how" (para. 4). Massey (2005/2014) similarly conceptualizes space, imagining it "as a simultaneity of stories-so-far" (p. 9), which, although an interesting theoretical lens with which to view or analyse space, is ultimately a metaphorical abstraction, one that configures or interprets space as *narrative*. A real-world classroom, even if it can be understood as a space of "stories-so-far," is still *also* a concrete arrangement of the built environment and its geometric properties, an arrangement that requires practical guidance or solutions for educators, particularly classroom teachers, to design or transform such spaces. At the same time, it would make sense to consider the possible narratives created or influenced by such a concrete arrangement of space, because, as Hammersley and Atkinson (2007) argue, "if we want to make sense of many social worlds, we ought to take account of how they are physically constructed" (p. 134). As I will argue in chapter 3, one approach towards achieving what the authors suggest here is to view pattern language theory through a sociomaterial lens, to interrogate pattern language.

While my thesis draws primarily from the sociomaterial arena of spatiality, inevitably some aspects of actor-network theory (ANT), another sociomaterial arena, will emerge in my discussion and analysis, although I do not ground my thesis in ANT. ANT's essence or nature is perhaps itself a rationale for its occasional appearances in my sociomaterial analysis. Classifying actor-network theory as a "subfield of social theory," Latour (2005) argues that its name "is so awkward, so confusing, so meaningless that it deserves to be kept" (p. 9). The confusing or meaningless name seems to capture the elusive or slippery nature of this theory. According to Fenwick et al. (2011), the term "refer[s] to the wild constellation of ideas" (pp. 95-96), and the authors suggest that:

It may be more accurate to think of ANT as a virtual 'cloud', continually moving, shrinking and stretching, dissolving in any attempt to grasp it firmly. ANT is not applied like a theoretical technology, but is more like a sensibility, a way to sense and draw nearer to a phenomenon. (p. 95)

For Thompson (2015), simply put, "ANT research is emergent and messy" (*To what end?* section) and "not easily pinned down. It is described as a theory, approach, method,

sensibility, and/or toolkit. The diversity of ANT-inspired theorizing means there is no one version of ANT" (*About ANT* section). The inability to classify ANT with any precision underscores why I have not exclusively used ANT as my theoretical underpinning, but rather have drawn upon it to complement my primary focus on the sociomaterial arena of spatiality.

Central to ANT and other sociomaterial perspectives (or arenas), is the idea of assemblages, whereby things (the material) come together, assemble, with people and their actions (the social). This concept of the assemblage, Johri (2011) argues, "allows us to take a sociomaterial view to look beyond the dualism of the social and the material without demoting the value of either" (p. 211). Latour (2005), in an attempt to remain faithful to both the etymology of "social" and sociology's intuitive origins, suggests that sociology should be understood or defined "not as the 'science of the social', but as the *tracing of associations*" (p. 5, emphasis in original) and "*a type of connection* between things that are not themselves social" and that can become assemblages (p. 5, emphasis in original). Echoing Law (2004, p. 42), Dovey and Fischer (2014) point out that "Assemblage is at once verb and noun: it is the flows of life, people, materials and ideas that give the learning cluster its emergent potential" (p. 50). Law (2004) argues that the English translation of assemblage (from the original French word "agencement"), although not a mistranslation, has strayed from the original meaning, and has "come to sound more like a state of affairs or an arrangement rather than an uncertain and unfolding process" (p. 41).

Law's (2004) point, with respect to how translation can miss the original essence of a concept, re-focuses the definition of assemblage on the uncertain or unstable nature of assemblages themselves. Rather than just an arrangement or collection of the social and material, assemblages represent a process. Postma (2012) similarly touches on these "processes of assembly":

> 'Assemblages' refer to any kind of heterogeneous collection of entities such as any particular learning space, laboratory, friendship, computer, door, information system or practice...Seen from a sociomaterial perspective, each of these assemblages consists of human and nonhuman entities that are aligned in a more or less coherent way and which have certain effects. (pp. 57-58)

The specific examples of the "entities" that are collected or assembled (and re-assembled, of course) help align the concept of assemblage with the everyday experience of schools.

Mulcahy (2012), for example, provides a straightforward explanation of how assemblages specifically relate to pedagogy, arguing that

> Pedagogic relations are not the exclusive concern of the teacher. They are embedded in distributed, heterogeneous and specific practices, so responsibilities for developing and maintaining them are similarly distributed and heterogeneous. (p. 21)

Put succinctly, "The educator is never a sole agent, but is produced within a particular heterogeneous assemblage" (Postma, 2012a, p. 59). Assemblages must certainly include the built environment and spatial configuration of specific learning spaces, and the people who make decisions about how a learning space should look, what materials (such as desks, chairs, posters, lighting, acoustic panelling) should be placed there and in which particular configuration. Perhaps one must also recognise the distributed, or collective responsibility to create or transform spaces in a meaningful, critical manner. This approach would include drawing on contemporary research and adopting a collaborative approach *in addition to* bringing sociomaterial perspectives that recognise how any adjustments to the materiality of a learning space cannot be untethered from social relations, professional experience, and pedagogical practice; this practice itself is influenced by cultural forces and, circling back, the material, for, as Johri (2012) notes, "the material changes as it gets it meaning from practice and this meaning changes as practices change" (p. 211).

A common thread, then, is the notion of practice being embedded in the sociomaterial; however, as Sørensen (2009) has argued, "the way in which materials take part in interactions in educational practice is rarely considered in the literature in the context of educational practice" (p. 7), a surprising situation in light of Johri's (2012) argument that "socio-materiality applies to all forms of learning practices as they are almost universally mediated by materiality" (p. 215). With particular resonance for the Media Hub as ICT space, Leonardi (2013) describes the process of the sociomaterial in practice through the following example in relation to technological artefacts:

> The use of the term "sociomaterial" also builds on the structurational approaches to technology, which showed that all technological artifacts were created through social interaction among people and that any effects that those technological artifacts could have on the organization of work were buffered and shaped by social interaction. (p. 65)

Sørensen (2009) makes a similar point, arguing that any technology forces us to question "what practice is constituted through this socio-material arrangement, what knowledge comes about, what kinds of pupils and teachers are created, and what learning is achieved" (p. 2).

In chapter 7, I consider some of these *technologies*—as design patterns—that I introduced in the Media Hub; for example, the CAMPFIRE, a sociomaterial assemblage of interactive projector-whiteboard-teacher table *and* computer-instructional gathering point. As a final point on the relationship between technologies and practice in education, Postma (2012a) suggests that:

> A more balanced perspective on new technologies has to recognise how the practice of education is already mediated by technologies such as the classroom, textbooks or student records that have become an invisible and 'natural' part of educational practices. The mediating role of these devices has significant effects on the nature and purposes of the practice (p. 62)

Any new technologies introduced in the Media Hub, of course, can also be seen as iterations of previous technologies. Along with other material objects, from the spatial configuration of desks and chairs to posters on the wall to textbooks left behind, such technologies contribute to the "invisible" part of educational practice to which Postma (2012a) refers above. This practice can be easily overlooked or taken for granted by educators, which reinforces the value of bringing sociomaterial perspectives and a critical understanding to the design of learning spaces in order to interrogate some of these "taken-for-granted assumptions about education" (Brooks et al., 2012, p. 4).

At the same time, a cautious stance recognizes the limits of sociomaterial perspectives. Leonardi (2013), for example, asserts that "The concept of sociomateriality is extremely theoretical" (p. 60), while Mutch (2013), in the context of information systems and organization research, notes some potential limitations:

> The application of sociomateriality appears to be difficult in practice, with accounts tending towards a stress on the human side of the 'intra-actions' that are supposed to constitute sociomaterial entanglements. This produces accounts that, perversely, seem not to be specific about technology, which tend to be coy about just which combinations of the social and the material are performing subjects in particular situations and how. They also neglect the broader context in which practices are situated, which renders it difficult for analyses to take full account of factors such as power. (p. 32)

This quotation highlights the sort of challenges a sociomaterial practitioner might face. In my thesis, however, I explore the wider context of power and learning spaces (chapter 5), as well as the local context of contesting space as it relates to practice (chapters 6 and 7). One could also consider the practical limitations of a sociomaterial approach, for although it raises questions about the relationship between space and power, it does not necessarily provide pragmatic solutions (nor is it meant to). Still, in the wider context, "The usefulness of theory is its interpretative function. Through it we contextualise the world around us and our actions in the world" and, with implications for the construction of knowledge, this theory shapes the design of one's research study (Johri, 2012, p. 209).

As a method of research in education, spatial theory, therefore, is a useful analytical tool, Fenwick et al. (2011) argue, because it can help us understand how a space becomes a learning space, how the configuration might affect learning, lead to inequalities or exclusions, and "open or limit possibilities for new practices and knowledge" (p. 11). This last point has particular salience for the Media Hub project's participatory action research (PAR) approach (as I detail later in my *Research Methods* chapter). It is important, however, to look beyond classroom spaces and adopt a wider perspective when considering any inequalities or exclusions, so the next section of this chapter brings sociomaterial perspectives to a critical review of international schools and iconic architecture. Issues of space and power can be bound up in assemblages that include the appearance of the schools themselves, and how the exclusivity of these spaces increasingly demands a particular type of architecture that simultaneously brings and projects status for the various *fractions*[5] (Sklair, 2005) that comprise the transnational capitalist class (TCC).

Iconicity and international school design

This section will draw out dominant sociomaterial perspectives on space, international education, and the transnational capitalist class, beginning with a consideration of Sklair's (2005, 2010) concept of the transnational capitalist class (TCC), and its use of iconic architecture to promote its own power and ambitions, particularly to turn more and more space into consumer space, which I will argue includes the spaces of international schools. The TCC, whose members could be considered the primary clients of international schools,

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[5] Sklair intentionally uses the term *fractions*, not factions, an interesting distinction which could imply a calculated division of entities.

provides the backdrop to this section's review of critical perspectives on international schools. I first trace the origins and development of these schools, and how they serve a globally mobile clientele. Then, I examine international education as a global commodity, framing international schools as spaces of exclusion.

The transnational capitalist class

According to Hill (2006), global capitalism has resulted in competitive education markets that "are marked by selection, exclusion and are accompanied by and situated within the rampant—indeed, exponential—growth of national and international inequalities" (pp. 107-108). In addition to international schools being exclusive spaces of education, such "rampant" increases in inequalities can be symbolised and reinforced through the iconic status of some new building projects at international schools. Such grand, or even monumental projects require millions of euros or dollars, and so funding must draw on corporate ties and other global actors who are part of the wider assemblage of power that envelops international spaces of education. Resnik (2012b) highlights how

> International education, as noted already in the existing literature, is linked to global actors – international organisations, international surveys, the International Baccalaureate Organisation, the European Union, UNESCO. (p. 292)

The term "global actors," with its connotations of both artifice and power, echoes Sklair's (2005) concept of the TCC, which he explains "consists of people who typically have globalizing as well as (rather than in opposition to) localizing agendas," who call more than one place home, tend to work transnationally, and both drive and serve capitalist globalization (p. 485). Sklair and Struna (2013) note how scholars of global capitalism concur that this class' emergence began in the 1970s in tandem with the proliferation of transnational companies (p. 748). Sklair (2005) conceptualizes the TCC as consisting of four fractions: *corporate*; *state* ("globalizing politicians and bureaucrats"); *technical* ("globalizing professionals"); and *consumerist* ("merchants and media"), with members of each fraction often moving from one fraction to another (pp. 485-486).

Sklair also (2016) provides a broader sense of the TCC's identity:

> Members of the TCC tend to share similar life-styles, particularly patterns of higher education (increasingly in business schools) and consumption of luxury goods and services. Integral to this process are exclusive clubs and restaurants, ultra-expensive resorts in all continents, private as opposed to mass forms of travel and entertainment

and, ominously, increasing residential segregation of the very rich secured by armed guards and electronic surveillance, from Los Angeles to Moscow, from Manila to Beijing, from Lagos to Mumbai. (p. 332)

The route to these patterns of higher education, of course, would likely start with a private or international school education, which can also be understood as a luxury product, so one could reasonably add international schools themselves to Sklair's list above of exclusive spaces. Such private (and often "ultra-expensive") international schools, which can also be found in all of these cities listed above, would likely have their own visual markers of segregation that could include fences, security guards, or even iconic architecture.

Iconic architecture

Iconic architecture, as Sklair (2005) defines it, is represented by "buildings and spaces that are (1) famous for professional architects and/or the public at large and (2) have special symbolic/aesthetic significance attached to them" (p. 485). The buildings should also be visible from as many vantage points as possible, and part of a city's skyline (Sklair & Gherardi, 2012, pp. 63-64). The *consumerist fraction* of the TCC then works to transform architectural icons into commodities (Sklair 2010, p. 141). Put another way, "When iconic identity can be delivered in the form of a piece of architecture, iconicity may be considered a product in itself" (Sklair & Gherardi, 2012, p. 66). Buildings can achieve iconicity by being associated with notable architectural firms, but especially globally famous architects—for example Frank Gehry or Zaha Hadid—who are sometimes referred to as *starchitects*. Sklair and Struna (2013) point out how both developers and notable architectural firms tend to promote their own projects as being iconic, an opinion that is then uncritically adopted by the wider public (pp. 758-759). Sklair and Struna (2013) suggest three essential qualities of iconicity: "fame, symbolism, aesthetics" (p. 760); and iconicity can occur at the local or urban level (Sklair & Gherardi, 2012, p. 60), which lends support to applying this theory of iconicity to international schools in a local context. Sklair and Struna (2013) also highlight the ubiquitous presence in the media of words like *icon* and *iconic*, and refer to other researchers who note the prevalence of this word usage in scholarly research (pp. 749-750). In chapter 5, I note examples of some international school building projects that are referred to as "iconic" in the media, and how such language aligns with other methods of promoting the status and iconicity of a school.

According to Sklair and Gherardi (2012),

architecture has been used to transmit and reinforce the power of the strong over the weak and up until the middle of the 20th century such ideas were discussed largely in terms of the role of monumentality in architecture. (p. 57)

Monumentality, however, can also have positive overtones. Hertzberger (2008), summarising the evolution of school architecture by the middle of the 20th century, notes how

The school building became a type, readily identifiable and familiar in the cityscape and fully integrated and assimilated in the urban blocks. Indeed, these schools expressed in their monumentality and not without pride the unconditional acceptance of educational institutions in the social democracy of the first half of the 20th century. (p. 12)

In contrast, iconicity—arguably the latest iteration of monumentality—symbolises not social democracy and the role of education in society but rather capitalism and the globalising ambitions of the TCC; not architectural integration and assimilation but instead a jarring incongruency and showiness. (Of course, it is not uncommon for an international school to be located in an exclusive enclave or remote area of the city.) Conceptualizing iconicity in architecture "as a resource in struggles for meaning and, by implication, for power," Sklair and Gherardi (2012) also argue that "members of the transnational capitalist class—the drivers of capitalist globalization— promote iconic architecture over monumentality as a marker of their hegemony" (p. 58). Where once school buildings, particularly larger or monumental ones, might have projected the power of the state and its role in educating its citizens, now an international school's iconicity projects privilege, and the power of the TCC.

Benedikt (2007) claims that architecture that is meant to shock, amaze, or be iconic is the wrong type of architecture for private homes and workplaces. Surely one could also include the school as one of these workplaces. The eventual familiarity with a building's supposed iconicity, Benedikt (2007) argues, "breeds boredom if not contempt" (p. 10), which suggests that a shocking or aesthetically symbolic façade does not exist for the building's users, but rather for occasional visitors or passers-by. It is there to be seen not experienced. As Hertzberger (2008) argues, "Architects who design schools have to do more than provide routine tricks and good-looking run-of-the-mill solutions" (p. 9). To summarize, the TCC will use iconic images, objects, or individuals in its service (Sklair & Struna, 2013, p.748), so in the context of international schools, iconicity, one could argue, forms part of an assemblage

that projects the power of the TCC by drawing attention to the status embodied by these exclusive spaces.

International schools and iconicity

Sime (1986) has argued for an architectural focus on creating places, not just designing spaces. A trend for international schools, though, appears to be a focus on the status achieved through high-profile building projects. Such projects, because they privilege the grand over the small, could offer a diminishing sense of place for people in the building. In the context of iconicity, small transformation projects matter little, for, unlike a large and impressive (iconic) building, they cannot be seen by the passing public, or recognized in a skyline, or promoted in a glossy publication. In other words, they cannot be iconic. To emphasise, iconic architecture, according to Sklair (2005, 2010), is often famous for its architect, or its physical or symbolic-aesthetic appearance; and this architecture reflects the increasing ambitions of the transnational capitalist class. In chapter 5, where I provide a detailed analysis of iconicity and international school architecture, I examine how some schools will also highlight the involvement of notable architectural firms. Sklair and Gherardi (2012) argue that iconic architecture, given its presence in people's lives, "is arguably the most important if largely unrecognized culture industry" (p. 71). To understand how this form of architecture, or "culture industry," is moving into international school design, one must first look at how international schools now form an industry, one that is increasingly bound up with business practices, multinational corporations, and, of course, the transnational capitalist class (TCC).

The international school industry

According to MacDonald (2007), international schools now represent an industry, and most international schools, Hayden (2011) argues, "can be viewed as examples of…transnational spaces created by the globalisation process" (p. 212). Some of the literature on international schools looks at globalized education spaces—for instance, how such global spaces can become embedded in the local, with varying degrees of "thickness" (Resnik, 2012c, p. 251). Ironically, perhaps, "The very connectedness of globalization creates the conditions for possible new forms of colonization" (Fenwick et al., 2011, p. 155). While Hayden (2011) similarly suggests that the spread of international education potentially has colonial overtones (pp. 216-218), Fenwick et al. (2011) argue that the

> spatial distribution of Western education…raises the larger issue of cultural

imperialism through globalized education, particularly in an era of the greater commercialization of education. (p. 155)

Such commercialization of education becomes bound up in the iconicity of an international school's building, a powerful visual (symbolic) reminder of the elite Western education on offer in what are increasingly homogeneous and exclusive spaces—enclaves that could also represent a sort of placelessness.

Space can be ordered through the spread of Western curricula and international education, or through an emphasis on concepts like global citizenship, which many international schools purport to offer; or through the use of iconic architecture whereby "the built environment can be manipulated in the interests of a dominant class" (Sklair & Gherardi, 2012, p. 58), because "the ordering of spaces is one of the ways in which power is exercised through the social" (Fenwick et al., 2011, p. 130). The iconic architecture of an international school highlights the power of the TCC, which can, arguably, also reflect on its members who enrol their children there. (This is not to say that status and power are the goals of all parents who enrol their children in international schools.) Iconicity could also provide mutually beneficial relations between the school and fractions of the TCC in the host city: TCC members get to send their children to an exclusive school whose status is enhanced through iconicity, while government and corporations can use the school as a selling point for attracting TCC corporations and employees to the city. At the same time, iconic architecture might also result in conflicting social relations with the local community, for example, as a result of unwanted urban geographical issues like increased traffic and noise, or a change in neighbourhood structure and activities. A building's iconicity—its obvious or shocking or even dominating presence—could also serve as a reminder of the school's expensive fees that prevent locals from sending their own children there. The TCC's power, therefore, is expressed through an exclusive educational space, part of a wider assemblage that includes architectural iconicity, and how that iconicity is manipulated to serve the interests of the TCC's local *fractions*.

The appearance of a school, its aesthetic—both façade and interior—can be used in the service of a range of power structures. Wood (2018) argues:

> Aesthetic considerations are also important instrumentally – who gets a beautiful school and who an ugly one can become a highly political question and tool. Governments know this and have used style and image of new school buildings to smooth the introduction of contentious new education policies – the Academies

programme in England, for example. And design can be used consciously to market schools and promote competition between them. (*Aesthetics* section).

Iconicity, therefore, can both create and reinforce (and "market") a space of exclusion that limits access to a particular type of education, such as an international education, which is promoted or branded as an increasingly valuable global commodity. Chapter 5, *International Schools and Iconic Architecture*, situates international school spaces—particularly through branding, and cross-branding with the International Baccalaureate (IB) programme—as part of the TCC's globalizing spatiality. According to Sklair (2016), the TCC has, at its core, a consumer ideology and drive to create ever more consumer spaces, which calls to mind Freire's (1996) theory of a dominating class that seeks profit above all, and "develop[s] the conviction that it is possible for them to transform everything into objects of their purchasing power" (p. 40). Hill (2006) argues that the capitalist class—that is, its neoliberal version in Britain and the United States—has a business agenda both *for* and *in* education. Hill (2006) writes:

> The business agenda *for* schools is increasingly transnational, generated and disseminated through key organizations of the international economic and political elite such as the Organization for Economic Cooperation and Development (OECD). (p. 120, emphasis in original)

Regarding the agenda "*in* education," Hill (2006) argues that such a plan "centers on setting business 'free' in education for profit-making" (p. 108), so this plan positions education as a product; in the case of international schools, it is an exclusive or luxury product, one could argue, which is sometimes reflected in the language that international schools use to promote themselves, as I examine in chapter 5.

Building on this range of critical analyses of the TCC and neoliberal educational agenda, I will argue that international schools can increasingly be viewed as consumerist spaces as achieved through the commodification and branding of a particular type of privileged education, one that is spatially presented—branded or sold—through the appearance of school buildings that represent large-scale or iconic projects. This consumer ideology can be observed by applying Sklair's (2005, 2010) concept of iconic architecture to some recent large-"T" Transformation or building projects at international schools that symbolically project their status outward, an example of what J.B. Jackson (1970, pp. 64-65) calls "'other-directed architecture'—that is, architecture which is deliberately directed towards outsiders, spectators, passers-by, and above all consumers" (as cited in Relph, 1976/2008, p. 93).

Iconicity of the building and brand signifies the status and power of the transnational capitalist class (TCC), whose globally mobile members might directly or indirectly fund these schools through their employers' (often transnational corporations or international organisations) donations or subsidies. International schools, arguably a kind of elite enclave, then offer what is considered an international curriculum to children whose parents are members of the TCC, or elite locals of the host country; it is an education that is not available to all (Bates, 2012) in spaces that contrast with the spaces that others occupy outside (Dolby, 2012).

Critical understandings of international schools

International education and international schools

International education is a familiar concept although not a well-defined one (Hayden & Thompson, 1995, p. 327). According to Resnik (2012a),

> International education represents a laboratory in which major sociological questions
> linked to the globalization process – the role of the state and social stratification,
> immigration, identities and multiculturalism – are alive. (p. 285)

Connotations of experimentation and inquiry in the word "laboratory" point to the ongoing development of international education—as a project—and make sense in light of the lack of a precise definition of an international school in the literature. James and Sheppard (2013), for example, assert that "The international school movement was started in 1949 when the Council of International Schools (CIS) was formed" (p. 2), and cite Sylvester (2002) that the "first international school, Spring Grove School, was established in the UK in 1866" (p. 3); however, Hayden and Thompson (1995) note that, arguably, the concept begins in 1924 with the International School of Geneva (p. 337). Resnik (2012b) connects the rise of international schools with the post-Second World War global mobility of middle-class families and their demand for international education (p. 293). Whenever or wherever the actual origins of international schools, most in the literature agree that they met a need for a transferable education for the children of diplomats working abroad; such schools, according to James and Sheppard (2013), were "almost exclusively for the children of expatriates" (p. 2). Today, international schools also recruit children of wealthy (elite) local families.

Like the concept of international education itself, there is no precise definition or classification for international schools because of the wide variation in their nature (Hayden

& Thompson, 1995, p. 332). For example, Resnik (2012b) summarizes the range of schools that offer or have offered international or national curricula abroad, such as European Union schools, United World Colleges, American (military or state-sponsored), German, British and others, including French schools, whose overseas network "comprises 480 schools in 130 countries that enrol 300,000 students" (p. 293). In addition to such overseas national schools or curricula,

> international schools with no single national affiliation catered in different sections for students of different national and linguistic backgrounds aiming at university entrance in many different countries. (Resnik, 2012b, p. 214)

Hayden and Thompson (1995) summarize research showing the challenges in trying to definitively categorize international schools, for a school might define itself as international because it is comprised of an international student body; or provide an international curriculum like the International Baccalaureate (IB); or be bilingual or trilingual through the provision of more than one national system; or centre on a philosophy of international-mindedness; or, as mentioned above, represent a national system or culture abroad (pp. 334-335). Moreover, as Resnik (2012b) argues,

> Neoliberal educational policies, including competition between schools, parent choice, accountability and budget reductions, promoted by international organisations, such as the Organisation for Economic Co-operation and Development (OECD) and the World Bank, have also indirectly encouraged international schooling. (p. 295)

One could add to this list of international organizations—or "global actors" (p. 292) as Resnik (2012b) calls them—transnational corporations, which perhaps complicates further the present day purpose, even influence, of international schools, whose traditional nature is likely a combination of what Hayden and Thompson (1995) summarize as the ideological and the pragmatic (pp. 329, 337); that is, on the one hand, ideological because the school promotes some sort of international or cultural understanding, tolerance or appreciation; and, on the other hand, pragmatic in that it is market driven (p. 337), serving the educational needs of children of diplomatic and other expatriate families that are globally mobile. Doherty, Luke, Sheild and Hinksman (2012) distinguish the twin ideologies of transnationalism and cosmopolitanism, noting that

> the International Baccalaureate was designed to enable a mobile lifestyle for transnationals without detriment to their children's education, and to nurture the global citizen. (p. 316)

This mobile lifestyle, one that is increasingly global, can also be seen as a lifestyle of privilege, one that raises questions about the nature of—and access to—the sort of global citizenship associated with attending an international school, which itself can be considered part of the TCC.

Global mobility

Mobility, according to Relph (1976/2008), "provides exposure to diverse cultures and places that comprises an enrichment of experience and can help to undermine parochialism and narrow-mindedness" (p. iv), an argument that maps well with early international schools' "ideological promotion of international peace and understanding" (Hayden, 2011, p. 221). Although these schools also now "serve the educational needs of globally mobile students" ranging from children of diplomats to employees of multinationals and NGOs to local families of the host country (Cambridge, 2002, p. 227), Resnick (2012b) connects the rise of international schools with the post-Second World War global mobility of middle-class families and their demand for international education (p. 293); moreover, international schools, Hayden (2011) notes,

> were arguably ahead of their time as transnational spaces promoting global mobility and global forms of education, before globalization as a concept emerged on the scene. (p. 221)

Bates (2012) defines different types of international education, including "intellectual tourism," whereby schools wish for students to have a broader appreciation for diversity and ways of life other than their own, often through interaction with or immersion in other cultures. Drawing on some research critical of this approach to international education, Bates (2012) cautions that intellectual tourism, ironically, can reinforce cultural stereotypes, or "the division between national and international spaces" (p. 268). He adds:

> Moreover, the mobility of intellectual tourists only serves to confirm the *immobility* of those being toured, something that may well be taken for granted by the tourists. (p. 269, emphasis in original)

Such a division is made starker when this mobility of intellectual tourism increasingly represents a product or commodity.

A global commodity

Global mobility, though, is not the only reason that some families seek an international education for their children. According to Resnick (2012c), "the recent demand for international education has come mainly from local elite and middle-class families" (p. 249), whereas Bates (2012) argues that

> The explosion in the number of international schools in developing countries over the past two decades can be seen as a direct result of thirst both for positional advantage within the home country and for the race up the hierarchy of desirable states. (p. 263)

As Aguiar and Nogueira (2012) have observed in Brazil, for example,

> Schools for the elites seem to restructure themselves according to an investment logic, offering educational products oriented to the families' new demands for internationalised education,

which further widens the "profound" gap between private and public schools; in other words, the rich and the poor (p. 367). Local recruiting is also a pragmatic approach to revenue generation, for in turning to local (usually wealthy) clients, schools could potentially off-set any loss in international clients that results from shifts in transnational company hiring, or repatriation, or a levelling out or saturation of the market (MacDonald, 2006, p. 207). Similarly, Hayden (2011) suggests that, for an "affluent host country family," international education represents "a prestigious commodity perceived to be superior to the form of education that would be experienced in local schools" (p. 218).

The trend of local families—local elites—sending their children to international schools, or of international and private schools offering an international education, though, is not limited to low- and middle-income (LMIN) countries, where "prestigious international schools are seen as the access route to prestigious first world universities" (Bates, 2012, p. 263). Such schools in LMIN countries, too, can provide a route to elite tertiary education (Hayden, 2011, p. 218), as well as the chance for local elites to associate with a—if not *the*—globally influential group: the transnational capitalist class (TCC).

The role of the International Baccalaureate

Currently at the centre of international education, and driving its reach, is the International Baccalaureate (IB), probably the most successful and firmly established international

curriculum (Hayden & Walker, 1995, p. 339), which culminates in a final two-year diploma programme to prepare students for university study. According to Resnik (2012c), "The IB constructs itself as a global network of schools led by a central organization (IBO) and sharing similar curricula, standards, textbooks, and missions" (p. 252). Although the IB curriculum (diploma programme) allows for some local adaptation, it is still modelled, Doherty et al. (2012) argue, on the principles of a "western liberal arts education," which "draws explicitly on Anglo-European liberal arts principles" and "canonical" texts and knowledge (p. 313). From its inception in Geneva in 1968, it would not be an overstatement to say that the IB has experienced immense growth, particularly in the last decade: as of "1 February 2016, there were 5,578 programmes being offered worldwide, across 4,335 schools," with 61.9% of these schools in the Americas, according to the IB's website (IBO, 2019a). To highlight the continued growth and influence of the IB, as of 3 May 2019, the number of programmes being offered worldwide has now increased by 1,030, across an additional 722 schools in 156 countries (IBO, 2019b). Overall, "Between February 2012 and February 2017, the number of IB programmes offered worldwide has grown by 39.3%" (IBO 2019b). From its humble and collaborative origins of a group of teachers, Resnik (2012c) argues, "The dramatic increase in the number of IB schools in the last 2 decades transformed the IBO into a transnational corporate entity" (p. 264). This point reinforces the argument earlier that international education is an industry.

While global mobility, as discussed above, has contributed to the rise of international schools, "the IB was designed to enable a mobile lifestyle for transnationals without detriment to their children's education, and to nurture the global citizen" (Doherty et al., 2012, p. 316), which is mostly a pragmatic need. In contrast, in Australia, where the IB is increasingly a curricular choice in state schools, the IB programme, in addition to attracting the socio-economically advantaged, "will appeal to the strategic middle-class parent, the aspirational student, and the tactical school in search of such clients" (p. 330). "Clients," of course, is a term from the world of business. Clients buy services or products. As Hayden (2011) notes, international schools, "offering a form of education in a 'home away from home', were the beginnings of the notion of education as a global commodity" (p. 214). Cambridge (2002) adds that international schools will become more like businesses, focus on efficiency, predictability (product assurance), control and "calculability (an emphasis on the quantitative aspects of products supplied and services offered)" (p. 230). Interestingly, his prediction coincides with a shift in the international curriculum that Resnik (2012c) has observed, for

while in the post–World War II era the disciplinary core of international understanding was social studies, the core subject for international-mindedness is now 'business studies.'" (p. 265)

It is worth noting that Cambridge's (2002) article on branding is sponsored by the IB, uses its logo, and concludes by promoting the value of further research into the branding of international education, which might help schools better identify their customers and improve marketing (p. 242).

Other researchers similarly note how the curriculum can serve as part of the commodity of international education. Bates (2012) draws on Roman's (2003) notion of "consumers of difference" (p. 268), "a cultural and educational relationship that sees difference as a commodity," whereby, as applied to international schools by Bates (2012), students acquire the most useful and desirable skills or behaviours—commodities—to ensure success in the global marketplace (p. 269); for example, "Cultural understanding and language acquisition are key components of this form of GCE [global citizenship education] which is essentially Western-centric" (p. 267). Here, an idealistic underpinning of international school origins— appreciation of the *other* and of cultural differences, as discussed earlier—is framed as a pragmatic quality, even a commodity. As Doherty et al. (2012) explain,

> While the IBO [International Baccalaureate Organization] is registered as a not-for-profit organisation, the IB credential accrues exchange value for the individual in terms of institutional access, mobility and employability. (p. 315)

These potential professional benefits of "exchange value" represent a clear example of privilege. Resnik (2012b), however, is blunter in her assessment of the IB's advantageous value, arguing that "The IB transcends national boundaries and offers an advantage to participants in the competition for positions of power in the world order" (p. 294), an advantage that is also sociomaterial in essence because international schools can be understood as *spaces* of privilege.

Spaces of privilege

International education, international schools, and the IB specifically, by claiming to transcend cultural and political boundaries, promote concepts like global citizenship; however, "Strictly and legally global citizenship is not possible," Bates (2012, p. 262) clarifies. As a concept, it is, in reality, probably not possible either for most of the world, he

adds, because

> citizenship is both a statement of belonging and a mechanism of exclusion. Clearly
> the great majority of the world's population are [sic] excluded from the possession of
> the kind of global citizenship suggested here. (p. 263)

The concept of global citizenship can also appear in curricular and school publications, as
well as external publications, such as those from relocation and international education
consultancy companies that assist families in choosing an international school—a sort of
industry within the international school industry. To take one example from a recent
publication, called *Guide to International Education & Schools,* from one such company,
Relocate Global, the author refers to students as "global citizens" in an article titled
"Enabling the next generation of global leaders?" (Marriage, 2016, p. 10). The possibility of
becoming a global leader, however, appears reserved for members of the TCC or local elites
who can afford to send their children to international schools. As Dolby (2012) argues,

> In the context of the entrenched inequities of today's global economic system, it is of
> course critical that an 'international' education be available to all children, not just
> those of the elite. (p. 372)

She admits, though, that this is not the case. At any rate, such an education is not truly
international, as some researchers note (Hayden, 2011; Resnik, 2012), but rather "Western-
centric" (Bates 2012, p. 267), as others similarly argue (Hayden, 2011; Doherty et al., 2012).

Calling on researchers to consider the wider contexts of international education, Dolby
(2012) does concede part of the limited focus is because:

> international schools around the world – like other elite schools – are privileged
> islands, sometimes surrounded by towering, thick walls and protected by barbed wire.
> In some cases, these schools serve gated communities that (on the surface) have little
> connection to the world immediately outside of its doors. (p. 371)

Dolby's "privileged islands" metaphor calls to mind Massey's (2005/2014) science parks, the
gated communities of a particular type of knowledge available only to some; in other words,
such "globalized workspaces" are spaces of exclusion (p. 178). Massey (2005/2014) is
critical of science parks and other enclosures of high-technology production, noting how they
are

> set apart from the messy world, devoted to a single activity (the
> production/elaboration, and glorification of high technology) … acutely aware of

location, and often quite elaborately guarded. (p. 96)

It could be argued that international schools are devoted to the single activity of providing an exclusive experience and education, perhaps elevating their own importance to the world, for some of these schools claim to educate future global leaders, a not-unfamiliar refrain in mission statements and international education publications. It is also not unusual for these schools to be gated and guarded, too.

Massey (2005/2014) also connects such spaces of exclusion with the past:

> The time-spaces of mediaeval monasteries, the old universities and today's science parks are all of them moments in the interweaving of the histories of the legitimation of a certain form of knowledge production. (pp. 144-145)

Although she concludes that masculinity, as a sort of caste, is the beneficiary of this knowledge production, perhaps international schools also produce and legitimize a certain form of knowledge—one centred on a Western, canonical, even neo-liberal education—and the beneficiary is the TCC itself. International schools, it can be argued, help the TCC to perpetuate its power and worldview. Given these concerns, it is useful to turn to Dolby (2012) who suggests that

> in the broader world context, international school communities need to ask themselves penetrating questions about their responsibilities and what leadership they can provide to local communities that lack resources. (p. 372)

However, as Sklair (2005) argues, members of the TCC tend not to be concerned with the local. In other words, local communities would hold little value for international school communities because these schools are governed by, and serve, those with ties to powerful and influential transnational corporations.

Branding

> The espousal of the values of free-market capitalism associated with the globalizing current of international education has led to the transformation of international education into a globally branded product. (Cambridge, 2002, p. 230)

Given its tremendous growth and global reach, as discussed earlier, the IB programme is increasingly at the centre of international education. For Doherty et al. (2012), the IB has moved beyond international schools to "offering a branded alternative in private and

government schools with local catchments" (p. 311). Aguiar and Nogueira (2012) refer to their own earlier research on middle- and upper-class families in Brazil who, with a focus on their children's future professional success and association with the international community, seek "internationalized resources," which represent "essential capital" as part of their children's education (p. 353); however, the authors do not look exclusively at what might be defined as an international school.

According to Cambridge (2002), "international schools operate in local markets as the franchised distributors of globally branded international education products and services" like the IBO or Cambridge Examinations (p. 231). To this interpretation, one could add franchises of famous private schools, such as Harrow, in the UK, which now offers just such a "branded alternative" in both Bangkok and Beijing in the form of Harrow International Schools, apparently providing "Leadership for a better world," according to their mission statement (Harrow, 2016, *About us* section). The website also claims that there is no "'typical Harrovian,'" and then lists a range of famous graduates, implying future success or fame for new students, an example of what Sklair and Struna (2013) might describe as the "rhetorical and symbolic production" of the icon through marketing (p. 758). As another example of globally branded education, Harrow International School in Beijing, on this same webpage and amongst other logos of accreditation bodies, lists Edexcel, which is part of Pearson, arguably a transnational education and examination corporation (see Figure 25). The school's website also draws on and promotes the fuzzy "World Class" designation:

> Our World Class Qualifications programme is bringing together international assessment and education experts to develop qualifications that will support young people in the UK to meet the challenges of today and tomorrow. (Harrow, 2016, *About us* section)

The partnership with an examination company also links with the neo-liberal attitude (an essence of TCC ideology) towards education that focuses on the supposed benefits of performance, quantification, standardization, and competition (Hicks, 2018). Cambridge (2002) notes the prevalence of such partnerships or relationships:

> Schools and examination boards are joined in a symbiotic relationship giving mutual benefit, because the examination boards require the schools' knowledge of local markets while the schools derive benefit from their association with the name and reputation of the branded product that they are retailing. (p. 231)

To summarize, there is branding of international education as a concept, branding of international schools, cross-branding of specific curricula, like the IB, or Cambridge Examinations; and, of course, the branding of iconic architecture. One can apply here Sklair's (2010) point that "The end-point of the culture-ideology of consumerism is to render everything into the commodity form" (p. 141). The branding so far discussed occurs online or in public spaces, but it can also occur within international school spaces, which I will analyse in detail in chapter 5.

Cambridge (2002) points out that, for the brand of international education, one cannot be certain who the customer is, and asks if students are "workers, clients or products" (p. 238). Perhaps the customer is the school, he wonders, for it buys the products and services, then acts as retailer to still other consumers (p. 238). He also looks to the website of the International Baccalaureate, which appears to "direct their advertising to a variety of stakeholders, including students, parents, teachers and other education professionals" (p. 238). One could add to this list members of the TCC. International education, according to Hayden (2011), is now "a global commodity purchased by the socioeconomically privileged" (p. 221). If it is a commodity, or product, then it can surely be branded. Cambridge (2002), for example, analyses international education (as product) in light of the concept of "brand personality"—the tangible properties of a product, and the intangible properties, or symbolic value (pp. 232-233). With respect to iconicity, Sklair and Struna (2013) also draw attention to marketing and symbolic value as created by the TCC consumerist fraction, which

> synthesizes the symbolic–aesthetic qualities of the icon into all manner of 'things,' including commodities that can be mass-produced and sold across diverse geographic and cultural markets as well as small batch luxury items. (p. 758)

In some ways, international education, or specifically the IB diploma, is also a luxury item, one available "across diverse geographical and cultural markets" and increasingly mass-produced (if the IB's numbers are anything to go by), but accessible, primarily, to the TCC or local elites through international schools. And because local elites can afford to purchase such an education, as discussed earlier, the branding of international education—and the iconic buildings in which it is on offer—help transform such an education into a luxury item, for it is certainly beyond the financial means of most locals, particularly in low- and middle-income nations. It is worth noting that things might be changing to some extent, for a number of state schools across the world, but particularly in the United States, offer the International

Baccalaureate (IB) Diploma Programme. In the United States, as of June 2019, 820 state schools versus 120 private schools offered the IB's Diploma Programme. In the Africa-Europe-Middle East region, in comparison, only 260 state schools offered the Diploma Programme versus 705 private schools (IBO, 2019, *Programmes* section).

According to Sklair and Struna (2013), "The centrality of branding as a transnational economic practice in the success of capitalist globalization cannot be overstated" (p. 751). With the IB, for example, Resnik (2012c) argues that its increasing brand presence in many countries is a type of spatiality that reflects "the growing embeddedness of the global IB brand and logo into the national" (p. 260), which also represents its "denationalization capability" (p. 262). And like other global products, international school branding appears to straddle or traverse spatialities, for this branding can be found anywhere from public spaces to online spaces to school spaces. In short, as Sklair (2010) argues, the TCC, through iconic architecture, attempts to transform all public space into consumerist space (p. 135). One might add that the spaces of international schools are well underway in their transformation into consumerist space. This transformation, of course, ignores the experiences of the students who inhabit the everyday spaces of these schools.

Third culture kids

The literature on third culture kids (TCKs) often begins with a definition of this term or concept, a necessity that perhaps belies its relatively recent emergence as a research field and focus. Certainly, it remains a narrow field, one in which most researchers know each other and are usually themselves educators of these types of children (Hill, 2000, as cited in Dolby & Rahman, 2007). Just as there is a lack of consensus in the literature in defining exactly what an international school is (MacDonald, 2006, p.192), probably because the schools themselves are in the process of negotiating their own identities (Grimshaw & Sears, 2008, p. 263), there is also no single definition of a third culture kid. Fail, Thompson and Walker (2004) credit Useem, Donoghue, and Useem (1963) with coining the term, however. Other researchers draw on Pollock and Van Recken's (2009) straightforward definition of TCKs as children who "are spending, or have spent, at least part of their childhood in countries and cultures other than their own" (p. 3). Walters and Auton-Cuff (2009) use this definition, for example, as the criteria for inclusion in their study of how female TCKs form their identities. Van Recken (Pollock & Van Recken, 2009), though, has since developed further distinctions

between TCKs and the cross-culture kid; while the latter is "a person who is living or has lived in—or meaningfully interacted with—two or more cultural environments for a significant period of time during childhood," the traditional TCK is one who moves to another culture because of a parent's career choice (p. 31). Dolby and Rahman (2007) point to other research suggesting that the concept of the TCK has its origins with the children of military and missionary families, whereas Pollock and Van Recken (2001) claim, rather hyperbolically, that TCKs have "been around since the beginning of time" (p. 4). Another common, or synonymous label is "global nomads," which, for Grimshaw and Sears (2008), represents a kind of postmodern lifestyle.

Third culture kid research approaches

The field of comparative and international education, Dolby and Rahman (2007) argue,

> is quite small (numerically), has little influence in academe, and is exceedingly diverse in its methodological approach and content. Comparative and international education tends to function as a separate academic subfield, with only tangential connections to other areas of education. (p. 684)

The authors go on to note how international school research tends to be "limited in scope" comparatively, with the researchers responding to each other's work in their publications (p. 690); on the other hand, the cross-section of contributors and researchers is very international in terms of researchers' geographical location. As mentioned above, they tend to know each other and, as school administrators or teachers themselves, their schools usually are affiliated with the two main international educational accreditation institutions, the International Baccalaureate and the Council of International Schools (p. 692).

Grimshaw and Sears (2004) present what could be considered another gap in the literature:

> To date, research has tended to allow little space for the voices of global nomads themselves. When empirical research is cited, this tends to be of the 'etic' kind. That is to say, the researchers seek to study people from an objective distance and to quantify them. (p. 272)

The authors' solution is to turn to a narrative analysis methodology. Two examples in the literature of a personal narrative analysis (Fail et al., 2004; Walters & Auton-Cuff, 2009) embody the principle of recognizing the voice of the student, though only as it pertains to peer relationships and integration in general. It seems here as if student experiences, activity, relationships and such, exist in the ether rather than within the materiality of classrooms,

hallways, and cafeterias. Although the narrative analysis represents a refreshing approach, the authors do not provide enough context for what the students are saying; participants' reflections do not appear tied to the school environment, or their own education. My participatory action research approach for the Media Hub aims to address such gaps in the literature. Returning to a conceptual framework, perhaps one must also consider what exactly an international school is, and for what purpose it exists. One could also consider the extent to which the school's identity matters and if this identity is shaped in any way by the built environment or spatial configuration.

Third culture kid identity, a key focus for some researchers, is connected primarily—if not solely—with a student's sense of belonging that is dependent upon her relationship to other TCKs (Walters & Auton-Cuff, 2009). Fail et al. (2004), though, argue that "the TCK identity is fostered in the school as it represents the third culture" (p. 324) whereas Grimshaw and Sears (2008) believe that "global nomads may construct their identities by selecting from a diverse range of context-related artifacts" (p. 265), also giving the example of clothing, culturally imposed norms and then the individualization within those norms. In later research, Sears (2011) argues that a student's identity is formed not only through how she views herself, but also through the identity positions that are available to her and

> thus, it is proposed, identity in a postmodern world is hybrid, composite, dynamic and unfixed, with identity positions being negotiated according to the social possibilities and constraints of each context (p. 73),

an argument one might align with a sociomaterial perspective. Again, what tends to be missing from the literature is a thorough consideration of the effects of material assemblages, which I address in chapters 7 and 8.

Sears' (2011) findings suggest that identity is based on mobility, history of moves, and peers who are in the same situation. Fail et al. (2004) look at the social environment and how identity is socially constructed through it, particularly that "the TCK identity is fostered in the school as it represents the third culture" (p. 324). Ittel and Sisler (2012) hypothesize that increased self-efficacy through stronger family bonds indirectly contributes to better socio-cultural adaptation, recommending that teacher training should also focus on the facilitation of effective socio-cultural adaptation through strengthening "close family bonds and friendships, online, in the classroom, and beyond" (p. 491). While this is a fairly universal

pedagogical approach, the (almost trite) recommendation does help us infer the influence or key role—even more so than for home country schools—that teachers at international schools might have regarding the adaptation or integration of TCKs in their new school.

Third culture kids and place

TCK experience and identity, according to the research, tend to be based on relationships with other TCKs, as discussed above. TCK research therefore appears rather limited with regards to how space might influence these relationships, how students experience learning or a sense of place because of the built environment, be it a classroom design or campus setting. In short, the research offers scant evidence that the school's spatial arrangement matters at all to TCKs. Perhaps students do not pay much attention to their school spaces, to the built environment. Another possibility is simply that researchers have not asked the right questions for this line of investigation. A gap in the literature therefore exists for an investigation into how space and learning space design might affect the particular academic experience, and even perceptions of place, of third culture kids. If one were to accept Alexander's theories (1977, 1979, 2002), the arrangement of space in a school should influence how students feel, so it is not unreasonable to imagine that these feelings might impact students' daily interactions with both teachers and peers, or their experience of learning.

The TCK literature might ignore or miss the influence of space and place, but there is no escaping that place changes us (Massey, 2005/2014); not necessarily through visceral belonging—rootedness—but instead "through the *practicing* of place," through myriad instances of contestation, accommodation and negotiation (p. 154, emphasis in original), experiences that are bound up in the material. Perception or sense of place, in other words, is not guaranteed just from time spent somewhere, which might be a commonly held assumption. Massey's sociomaterial perspective above is, to some extent, similar to Relph's (1976/2008) phenomenological perspective when he argues that a sense of place can be achieved through a brief duration somewhere, an argument that also echoes Tuan's (1977/2011) definition of place as somewhere we "pause." A pause for an international student, of course, could be a one-year "pause" at the next international school.

A student's perception of place is perhaps akin to the concept of perceptual space, which Relph (1976/2008) defines as "the egocentric space perceived and confronted by each individual" (p. 10), for most humans put themselves at the centre of space. Relph

(1976/2008) also argues that not only is this a "space of action centred on immediate needs and practices" but also "the realm of direct emotional encounters with…built and created spaces" (p. 10). In this light, one could find value in considering the subjective—all-too-human—experiences of students in response to the built environment and varied design elements of a particular learning space. Echoing Relph's point above, any emotional possession of places, Alexander (2004) argues, comes in part through the subtle adaptation between people and their buildings (p. 43). For Tuan (1977/2011), "what begins as undifferentiated space becomes place as we get to know it better and endow it with value" (p. 6). We might move [cities, for example], but "places stay put. Their image is one of stability and permanence" (p. 29), which is what one would imagine a school building can offer for students and a community; however, international schools—often lacking a lengthy history and set apart from the host culture—might not be considered permanent in the way one might view a state school that is usually rooted in the local community and home culture. Instead, as argued earlier, international schools, through both iconic architecture and an exclusive education, could increasingly serve as an image or symbol of the TCC's power and prestige.

At the same time, a school is not just its appearance. Moving inward from the wider context of the sociomaterial assemblage of iconic architecture and the international education market, I will consider the built environment of schools, from classrooms to hallways to corners. The design and spatial configuration of these everyday spaces of education are also bound up in sociomaterial assemblages, of course (and cannot be detached from larger issues of space and power as they relate to the TCC). While some learning space design approaches address and reflect contemporary thinking on the experience of learning, they can still reproduce and reinforce traditional power structures or pedagogies. In chapter 5, I will show that international schools, through both iconic architecture and an international curriculum, might offer an increasing standardization of experience and diminishment of place. Later, in chapter 8, I turn to students' (subjective) experience of learning and of *being* in a particular learning space—in other words, their perceptions of place; however, I still endeavour to connect that experience with the materiality of the learning space, the interplay between the human and non-human. My goal is to show the value of local transformation projects, for they have the potential to provide a sense of ownership or belonging—a sense of place.

The built environment: space and power

Architectural space

All space influences how we act and feel (Alexander et al., 1977). One hears echoes of this claim from other architects, such as Brislin (2012), who argues: "In its widest sense architecture and the space we make inhabits us; it conditions how we feel and respond to our surroundings" (p. 8). Similarly, Gehl and Koefeld (2016) believe that "We can influence life and the character of life in any given space" (*The Right to Space* transcript). In general, the appearance of buildings remains central to how people conceptualize and respond to architecture. In the context of educational buildings, Wood (2018) points to the usefulness of influential architect Giancarlo De Carlo's simple definition of architecture: "Architecture is— and can't be anything but—the organization and form of physical space" (para. 3). Wood (2018) argues that De Carlo's definition is a starting point that could offer methodical value for researchers of schools, for it

> provides ways to think seriously and helpfully about space (who organizes it? how? etc.) rather than get distracted by 'architecture' and whether or not a building is intended to be attractive. (*A Useful Definition of Architecture* section)

The allure of architectural style and appearance, and even the architect herself, seems to be an increasingly modern fascination. Still, aesthetics, "part of what makes it pleasant and interesting to be somewhere," should be considered in light of the above definition, Wood (2018) concludes, as well the amount of space available, which affects how classrooms and learning spaces can be organised. Hertzberger (2008), noting the psychological importance or influence that schools' surroundings have on young people, argues for ensuring that these surroundings "are as rich and varied as can be, evoking as many positive associations as possible and leaving the best of memories" (p. 9).

Taking a broader perspective, a number of critics highlight the egotism, arrogance, or privileging of style and shock value prevalent in architecture (Benedikt, 2007, pp. 4, 8; Buchanan, 2012, para. 11; Goodyear, 2014, p. 66). Stilgoe (1994) offers withering criticism, decrying what is "an age of so much homogenized space, so much shoddy, cramped, dimly lit, foul-smelling, low-ceilinged, ill-ordered structure" (p. ix). Alexander et al. (1979) similarly critique the homogeneous character of buildings in the latter-half of the twentieth century:

> They are full of identical concrete blocks, identical rooms, identical houses, identical apartments in identical apartment buildings. The idea that a building can—and ought—to be made of modular units is one of the most pervasive assumptions of twentieth-century architecture. (pp. 143-144)

Pointing to what is perhaps the underlying problem with these architectural approaches, Hopsch, Cesario, and McCann (2014) argue that "architects often design and plan spatial configurations without knowing whether they fit real patterns of human behaviour" (p. 12). Because these patterns of human behaviour are ultimately bound up in sociomaterial assemblages, it is important to examine the everyday spaces that represent the actual experience of students and teachers. I next consider the literature on approaches to learning space design, focusing on learning zones, colour, and spaciousness, which have particular salience for the Media Hub's design features and pattern language approach. Later, in chapters 7 and 8, I will investigate the influence of the Media Hub's design on students' experience of learning and perceptions of place; however, by drawing on sociomaterial perspectives, I consider how such design approaches are still part of larger assemblages and power struggles. These assemblages also include the taken-for-granted material *things* in learning spaces, and the actions of the people who use these spaces each day.

Tracing space and power in schools

Whether by explicit rules or other regulations, Massey (2005/2014) argues, "all spaces are socially regulated in some way" (p. 152). Space, power, and school are inseparable (as I have demonstrated with the TCC-iconic architecture-international education market assemblage), and such sociomaterial relationships have a long history. In his seminal text *Discipline and Punish: The Birth of the Prison,* Foucault (1977/1995) recounts how, starting in the classical period, schools developed the technique "for taking charge of the time of individual existences; for regulating the relations of time, bodies and forces" (p. 157). Moreover, "the individual body becomes an element that may be placed, moved, articulated on others" (p. 164). A modern-day school's timetable, a powerful method of organisation and control, would represent a vestige of this regulation. Foucault (1977/1995) also notes how the classical period saw the creation of an architecture that eschewed aesthetics for "internal, articulate and detailed control…an architecture that would operate to transform individuals…provide a hold on their conduct" (p. 172). This kind of internal architecture endures, but what is interesting is the return to an architecture, in the context of many international schools, that *does* value aesthetics in a sense, yet not necessarily for a

pleasurable experience of space; instead, large-"T" Transformation projects rely upon visual appearance and related iconicity to convey the power and status of the TCC.

Today, the built environment can be understood as "part of the hidden curriculum of education, enabling and constraining the practices possible within particular settings" (Fenwick et al., 2011, p. 152). Drawing on the theoretical perspective of critical pedagogy, Morgan (2000) argues that "Schooling always involves power relationships and the privileging of certain forms of knowledge" (p. 274). This awareness of schooling, though, certainly cannot be considered universal amongst teachers and educators, nor is it usually connected with the design and spatial configuration of learning spaces. The "critical pedagogue," as Postma (2012b) argues, needs to be aware of the impact of different learning spaces, and how the knowledge produced there might address issues of power or exclusion (pp. 153-154). Such an awareness should also extend to an understanding of the historical and social influences on the configuration of classrooms, for, as Lackney (2015) notes about the history of the American schoolhouse,

> The architectural form and layout of the school building has historically been influenced by the evolution of educational philosophy and goals, curricular objectives, instructional methods, and cultural values of schools. (p. 23)

Foucault (1977/1995) examines how architectural design and control of bodies, through the architectural form of the building and the ordering of people and things, could be traced from barracks to prisons to factories and schools. In this context of institutional design, Foucault (1997/1995) also highlights Bentham's Panopticon[6] as a design approach that most efficiently and effectively controlled individuals, "without any physical instrument other than architecture and geometry" (p. 206); and yet power would be always visible and unverifiable (Foucault, 1977/1995, p. 201), residing "not so much in a person as in a certain concerted distribution of bodies, surfaces, lights, gazes" (p. 202), a distribution that could be interpreted today as sociomaterial. Perhaps a key reason that unequal power relations persist in schools is because of the static arrangement, over the past one hundred and fifty years, of these socially constructed spaces: a universal and pervasive ordering of classrooms, laboratories and so forth that obscures inequality (McGregor, 2004b, p. 14).

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[6] The archetype is a windowed central tower that looks upon an annular building comprised of windowed cells extending the width of the whole building. Opposite windows in the cells backlight the prisoners, making them constantly visible to a single supervisor in the tower. Isolated, they are always seen but do not see (Foucault, 1977/1995, p. 200).

Tracing the evolution of the school building in the USA, Lackney (2015) notes the transition from the one-room schoolhouse of village life in the Colonial Period to the larger community schools of the Industrial Revolution. At this point,

> Schools became highly formalized and hierarchically designed to sort students who were eligible for promotion to a higher level in the system from those who were not. (Lackney, 2015, p. 27)

What followed was an increasing standardization of school design, representing early factory design principles, in the 19th and early-20th centuries. Classroom configuration would include identical rows of individual desks that were bolted to the floor and orientated towards the front of the classroom (Lackney, 2015, p. 28), from where a teacher would easily have a panoptic position, especially if the teacher's desk or lectern were on a dais. This spatial ordering, then, is the product of *patterns* of design in the built environment. These design patterns influence, and are influenced by, patterns of behaviour or beliefs about education and social structure—in this sense, space is the social construction to which McGregor (2004b) refers above. McGregor's (2004b) "pervasive ordering" (p. 14) still represents the status quo today, an almost unspoken set of patterns (rules) for designing classrooms and schools. For Dovey and Fisher (2014), "The traditional classroom is a product of a teacher-centred pedagogy, framing a hierarchical relationship between teacher and students whilst closing out other activities and distractions" (p. 43). This last point is particularly interesting, a reminder of the sociomaterial nature of learning spaces, how the omission of certain kinds of "activities" can impact the kind of learning that takes place, or if there is even access to such learning (activities) in the first place.

The centuries-old tradition of seating students in rows imposes on them a kind of immobility, one that is dictated by the spatial configuration itself, and enforced by a teacher; or, recalling Bentham's panopticon, even enforced by students themselves through the internalization of explicit or implicit school rules about moving during lessons. The result is what one might call the panoptic arrangement of a traditional classroom. As Foucault (1977/1995) argues, "discipline produces subjected and practiced bodies, 'docile' bodies" (p. 138). Rouse (2006) has interpreted this point to mean that practices of subjection indirectly reconstruct the spaces and reorganize the timing within which people function (p. 98). A sociomaterial reading of space recognizes that mundane or taken-for-granted material things in schools can also

contribute to such restructuring or reorganizing of one's experience of space. And, ultimately, such *things* can be bound up in how power is negotiated.

Everyday educational materials can even become instruments for discipline, or help form homogeneous regions "saturated with authority" (Sørensen, 2009, pp. 147, 148, 151). Based on her own ethnographic study in a Danish primary classroom, Sørenson (2009) found that a blackboard becomes a "regional technology" that contributes "to performing regional patterns of relations" (p. 145). The object, obvious in the visual field, helps define a teacher region that students can visit or temporarily inhabit; still, students remain outsiders there (p. 147). Another example is the archetypal *teacher chair* in which the "material force of the chair-body assemblage" enacts "tropes of masculine confidence, power and authority vis-à-vis students" (Taylor, 2013, p. 694). Of course, such power need not be gendered, and Taylor's (2013) conclusion draws on a small ethnographic study sample.

One could argue that the entire classroom, which is subject to daily negotiation, is typically a teacher's region or space (Gordon, 1996, p. 306). A teacher can move about freely, and dictate where and with whom students can sit, whereas students usually must stay in place, sit still, be contained. Given the "limited autonomy experienced by [students] in relation to space and body use in schools" (Gordon, 1996, p. 303), a solution might be found in purposeful spatial reconfiguration; one might eschew power assemblages, after first being able to recognise them, by eliminating the traditional teacher desk and chair, for example, or encouraging autonomous student movement through standing desks and different learning zones, as we attempted in the Media Hub (chapters 7 and 8). Certainly, as Morgan (2000) has argued, researchers can no longer see space as neutral. Space is a social construction, and "the production of space is always tied up with questions of power and politics" (Morgan, 2000, p. 278).

Learning space design approaches

Similar to Alexander's (2002) point earlier that all space influences how we act and feel, Barrett and Barrett (2010) argue that humans experience spaces holistically and interactively, and the complexity of our sensory experience of an environment profoundly impacts "our behavior, health and performance" (p. 226), with high-density situations, lack of natural light, and poor acoustics causing inappropriate levels of stimulation (p. 226). Impact can also be a

holistic measurement. The Commission for Architecture and the Built Environment (CABE), formerly the UK government's public advisory group on design and architecture (now merged into the Design Council), uses a Design Quality Indicator for schools that addresses three principles of good design: *build quality*, *functionality*, and *impact.* Impact, based on the Vitruvian principle of beauty (*venustas*[7]), means that a "building and its grounds should lift the spirits and raise aspirations" (CABE, 2005, p. 27). This principle of design might also have implications for students' experience of learning and perceptions of place.

Although not enough researchers and educators focus on how classrooms and learning spaces could provide such a lift in spirits, or even a sense of enchantment and mystery for students, as Graetz (2006) has called for (p. 74), more recent research does consider learning impact (Lippmann, 2012; Woolner, 2011) or *built pedagogy*—how spaces affect teaching (Milne, 2006; Oblinger, 2006; Van Note Chism, 2006). Some researchers have investigated students' or teachers' overall comfort (Oblinger, 2006), often concerning negative environmental effects such as noise or air quality (Kristiansen, Lund, Nielsen, Persson, & Shibuya, 2011; Rivlin & Weinstein, 1984; Woolner, 2011; Yang, Becerik-Gerber, & Mino, 2013). A more recent, and richer study by Barrett, Zhang, Davies and Barrett (2015), of nearly 4000 primary students in the UK, provides strong evidence for how the design of classrooms can impact learning and performance.

Drawing on the tradition of environmental psychology, Rivlin and Weinstein (1984) have noted how, on the whole, both educators and educational critics tend to ignore how "the physical characteristics of a setting can influence both the behaviour of its users and the educational program" (p. 348). Yang et al. (2013) argue that "physical learning environments should be evaluated by studying both the physical attributes and the students' perceptions of those attributes" (p.172), which can be seen to some extent in how the UK's Design Quality Indicator (Construction Industry Council, 2014) recognizes the impact of the built environment on how students *feel* in a school or learning space. Even though more research now looks at the influence of the built environment on student learning or behaviour, and perhaps even how students feel in a space, such conclusions tend not to be considered in the context of issues of power.

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[7] Marcus Vitruvias was a 1st-century (BC) Roman architect who argued that architecture should adhere to three principles: *firmitas* (strength)*, utilitas* (functionality) and *venustas* (beauty)*.

It is becoming clear, then, that there are a number of gaps in the literature, and a need for greater awareness amongst educators of the influence of the built environment and learning space design, particularly as they relate to the negotiation of power, students' experience of learning, and their perceptions of place. Van Note Chism (2009), for example, points out that

> Low levels of awareness on how learning spaces influence learning outcomes, coupled with the complexities involved in building and maintaining learning spaces, have kept the topic of learning spaces from emerging for extensive public discussion. (p. 7)

Similarly, Horne Martin (2002) argues that a "Lack of awareness of physical and spatial needs in the classroom environment can interfere with the optimal functioning of the classroom" (p. 140). It is therefore worth investigating why more educators are *not* transforming their spaces, beyond such mundane changes like arranging desks in rows or groups or a horseshoe. A simple answer could be that people usually take the built environment for granted (Proshansky 1986, p. 222). Van Note Chism (2009) notes how "users of academic spaces often take the limitations of the physical environment for granted and do not demand involvement" (p. 7). But surely other barriers to meaningful involvement exist. Horton and Kraftl (2012) caution that a tendency to undervalue "lowercase-'t'" (or small-"t," as I have adapted the term) transformation projects prevents meaningful participation from teachers and students—the people actually using the spaces each day. Lippmann (2010) has argued for increased teacher education on how to identify the constraints of learning spaces, spaces that traditionally have been considered as "static entities rather than as places that mediate the dynamic transactions that occur within them" (p. 89). The constraints of a learning space, and any of these "dynamic transactions," though, are likely bound up in issues of power, issues that the literature tends to overlook.

Given educators' apparent lack of awareness of the implications of learning space design, and the limited meaningful participation available to both teachers and students, it is unsurprising that schools, in general, continue to have conventional classroom designs that reinforce traditional power structures and pedagogical approaches. Still, more researchers and educators increasingly recognize the impact of the built environment, and that "Well-designed learning spaces have a motivational effect" (JISC, 2006, p. 4), or the ability to change practice and influence learning (Barrett et al., 2015; Oblinger, 2006; Tanner, 2009).

Certainly, but not for the first time, a resulting narrative in the educational world is to imagine how schools and learning spaces should appear in the future.

"21st-century" learning spaces

Chapman, Randell-Moon, Campbell, and Drew (2014) note the relational and embodied nature of space, and that non-traditional or "open-space classrooms can be understood as one example of a material expression of the discourses around twenty-first-century learning" (p. 41). One can often encounter in educational literature and the media an argument that contemporary learning spaces should facilitate "21st-century" learning skills; unfortunately, this broad concept is often just a metaphor for woolly or vague ideas about a distant future where students are doomed without a certain (predicted) skill set that should centre on, as suggested by the National Education Association (2019) in the United States, the four C's: critical thinking, communication, collaboration, and creativity. Seemingly countless educational organizations or task forces or think tanks use phrases like *collaboration*, *problem solving*, *global learners*, *student-centred*, and *flexibility* to define a 21st-century skill set or experience of education.

A potential danger is that 21st-century learning can become merely a list of fragmented, and therefore measurable, individual skills to be accumulated; for, as stated in what is essentially a road map for 21st-century skills prepared by the UK's Secretary of State for Education and Skills in 2003, apparently "A better skilled workforce is a more productive workforce" (Crown, 2003, p. 17). This conclusion, like the many phrases and concepts that revolve around 21st-century learning, is a familiar tenet of neoliberal education ideology or reform, reflecting what Biesta (2009, 2015) argues is the increasing "learnification" of education. From this critical perspective, learning comes very much with a kind of individualistic, neoliberal agenda that says the self is the centre of the world and the world is just an object that we either make sense of, or that we use for our own pleasure or our own needs (Biesta 2015). As Chapman et al. (2014) point out, with respect to their ethnographic study of primary classrooms,

> In contrast to a 'traditional' spatial model of learning, where curriculum is designed and delivered within a fixed space that plays a neutral or extraneous role in learning, open-plan or nontraditional classrooms connect newly emerging pedagogical requirements for student-centred learning with an explicit awareness of space as educative. (p. 40)

Here, the emphasis is once again on student-centred learning and how space can facilitate this pedagogy. Of course, even if a traditional model assumes that the space has little influence in the learning process, a sociomaterial perspective would recognise that space cannot play a neutral or extraneous role in learning—material assemblages can always impact the kind of learning that takes place, how bodies are organised in space and time, and how power is negotiated in that context.

Of course, not all ideas about 21st-century learning and learning spaces are misguided or incorrect, or put the self at the centre of the world. In reality, a number of supposedly 21st-century ideas are already in place now, representing merely a continuation of 20th-century education. Still, for Painter et al. (2012), the "next generation learning space" (at the tertiary level), for example, eschews the divide between the traditional front and back of a classroom by turning to a more user-friendly design (p. 9), an approach we attempted with the Media Hub but that was still contested in interesting ways (chapter 7). Painter et al. (2012) also suggest that these next generation classrooms

> have generally been designed to accommodate diverse pedagogies, to ease the transition between teaching modes, and deliberately engage students in a more interactive learning environment than traditional classrooms. In addition, these spaces are usually designed to facilitate increased mobility for both instructors and students with the aim of increasing interaction. (p. 9)

As I shall examine in chapter 6, any such "diverse pedagogies"—as they relate to learning space design—are ultimately part of sociomaterial assemblages, so one should consider issues of power as well as the mutability of space, and whether or not the design choices, such as those Painter et al. (2012) suggest above, wind up at odds with the actual use of the space. Chapman et al. (2014) view "'twenty-first-century learning' as a "complex project both ideologically and culturally" (p. 41). In this context, they argue, "non-traditional classrooms are not just viewed as a resource or context of learning, but instead are seen as facilitating a set of social practices through which students learn" (p. 41). There is a likelihood that many educators and, of course, the wider public would not consider the sociomaterial complexity of 21st-century learnings spaces, even if the designation "21st-century" could be defined with absolute certainty. Moreover, as Goodyear et al. (2018) argue, "it is also easy to point to examples of newly created spaces that are under-used, unloved and unfit" or that "[make] a false god of flexibility and future-proofing (p. 222). Ultimately, trendy and abstract imaginings of the future of education can be too easily accepted without

critical and sustained examination, or these imaginings can be untethered from concrete and practical design solutions to the built environment, to say nothing of how such solutions relate to the negotiation of power.

Learning zones: movement and spaciousness

If the built environment is meant to facilitate a 21st-century skill set for education (assuming that such tenets of education are valid), one approach could be to move towards a non-traditional classroom layout, for such

> learning spaces have become complex settings through which students negotiate increased learner autonomy, co-operative learning, acceptable classroom behaviour and fluid relations with teachers and peers. (Chapman et al., 2014, p. 39)

For Cornell (2002), the physical environment of the 21st-century classroom

> needs to be bigger, more flexible, provide ubiquitous access to technology, promote interaction and a sense of community, enable formal and informal learning, and convey a sense of energy. The environment should be a place people want to be, not a place they have to be. They should be motivated by fun and enjoyment as much as by a desire to learn. (p. 41)

It is interesting that Cornell (2002) uses the term "place" and not "space," which hints at the perceptions of place that students might feel, as I explore later in chapter 8. The JISC (2006), a digital services provider for higher and further education in the UK, argues that 21st-century learning spaces "should become a physical representation of the institution's vision and strategy for learning – responsive, inclusive, and supportive of attainment by all" (p. 2). Although an admirable goal, it could be difficult to achieve in practice given that the intended design of a space will likely be at odds with its actual use, as was the case with the Media Hub (chapters 6 and 7).

In practice, for example, one could aim to create what Gee (2013) calls an "affinity space," a space for exploration with a focus on knowing *and* doing (production, problem solving), flexible status or leadership, and an emphasis on play and socialization (p. 174). This definition of "affinity space" surely implies spaciousness, movement, freedom. In a wide review of the literature on classroom design, however, Wulsin (2013) found that:

> The physical classroom too often limits the range of active learning experiences. Space for group-driven activities, access to multimedia display and creation tools, and

flexibility in room layout are all aspects of a well-designed learner-centered teaching space. (p. 19)

Walden (2014) echoes this point and makes the following suggestion for classroom design: "It is important to provide areas…within each classroom, where smaller groups or even individuals can retreat into relative privacy" (p. 109). Specific areas dedicated to group work, or corners for individual retreat, allow students to have some sort of privacy while still being part of the larger group: perhaps a corner or alcove, a design pattern that allows one—or a group—to temporarily withdraw. Such zones for individual retreat have phenomenological value as well; as Bachelard (1958/1994) puts it,

> every corner in a house, every angle in a room, every inch of secluded space in which we like to hide, or withdraw into ourselves, is a symbol of solitude for the imagination. (p. 136)

Although he is writing about the house specifically, it is not unreasonable to extend to the school building or a classroom this elemental need to choose seclusion and solitude; in other words, a choice of how to experience learning or the learning space.

Defined settings like corner spots or alcoves, or similar well-defined learning zones, have the possibility to influence how one experiences learning or perceives place, as well as influence behaviour and social relations. As Van Note Chism (2009) argues,

> room design influences the social context of the classes, student-instructor and student-student relations, instructional design options, and the overall effectiveness of instructional technology. (p. 7)

Further implications for how behaviour or social relations might also be affected by crowded classrooms can be seen in Moore's (1986) study of elementary students, which included the following finding: "Cooperative behavior occurs most often in well defined settings, and competitive behavior seems to be related in part to poorly defined settings" (p. 225). Cooperative behaviour is reminiscent of the kind of collaborative learning experience meant to embody 21st-century learning[8], and which underpinned much of the Media Hub's design; however, one must remember that the spatial configuration is merely part of a larger assemblage that includes a particular pedagogy (collaborative learning) that, itself, is subject to educational trends and wider social or political forces. Moore's (1986) "well-defined

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[8] At the same time, as Biesta (2015) argues, the neoliberal agenda for 21st-century learning has, at its core, competitiveness, for the emphasis is on the individual and personalised learning.

settings," above, can also be understood as *learning zones*, which a number of researchers recommend as a design approach (pattern) in classrooms and other learning spaces (Barrett et al., 2015; Van Note Chism, 2006; Walden, 2014; Wulsin, 2013). By creating specific learning zones and other well-defined settings, then, flexibility can be built into the learning space, rather than something that needs to be achieved through constantly rearranging furniture. Movement can be made easier, perhaps more permissible (a student need not ask the teacher), and even be encouraged by the purposeful spatial configuration.

Without such well-defined settings, such as a seminar table for group work or, say, a whiteboard wall for student brainstorming, it is difficult for classroom configuration to move away from traditional layouts that often centre on the power or control of the teacher—even the horseshoe configuration, which many assume is a student-centred configuration and solution to rows of desks, is still a seating arrangement that favours or indicates a teacher-centred approach to learning, and offers little chance for student movement (Horne Martin, 2002); moreover, that lack of movement potentially has implications for health and well-being. The simple act of standing from a seated position, for example, can burn three times as many calories as just sitting (Levine & Yeager, 2009). An eighteen-month study by Cardon, De Clercq, De Bourdeaudhuij, and Breithecker (2004), with a focus on language and mathematics classes at the primary level, compared traditional schools versus "moving schools" (standing desks, dynamic seating). The authors found that "pupils in a traditional school spend an average of 97% of the lesson time sitting statically" (p. 139), and they note other studies that found a correlation between longer periods of sitting and neck and back pain in adolescents. These findings suggest that limited movement and physical discomfort affect well-being, which, one could hypothesize, could have implications for learning, or the conditions for learning.

Other authors that have studied the positive impact of standing workstations in primary classrooms focused on increased caloric expenditure (Reiff, Marlatt, & Dengel, 2012) and even overall long-term health outcomes (Hinckson et al., 2014). Although the studies were somewhat limited in scope, their findings are a reminder of the many factors in the built environment that can influence students' experience of learning (or even learning outcomes). In the Media Hub, for example, we introduced standing tables (with bar stools), as part of the PODS pattern (chapter 8), which were meant to encourage standing, movement, and the visiting of others' work stations for collaboration or discussion. For this same purpose, we

also introduced a whiteboard wall. Similar to the case in Yeoman's (2018) participant observation in a primary school, students would move throughout lessons both to and from the wall, which became "part of the fabric in this place" (p. 93). Movement or ease of movement, then, perhaps connected with a sense of spaciousness, could be purposefully built into the configuration of learning spaces. Although design patterns, like standing workstations or whiteboard walls, might address factors such as movement and well-being, there are always wider sociomaterial implications to consider; for example, a sociomaterial perspective would consider how *any* spatial configuration influences, or is bound up in, relations between students, or between students and teachers. Material assemblages that serve to immobilise students or discourage movement, or that make classrooms feel less spacious, have the potential to influence social relations or students' experience of learning.

Tuan (1977/2011), arguing from a phenomenological perspective, notes how "Spaciousness is closely associated with the sense of being free. Freedom implies space; it means having the power and enough room in which to act" (p. 52). Put another way: "The world feels spacious and friendly when it accommodates our desires, and cramped when it frustrates them" (Tuan, 1977/2011, p. 65). Brand (1994), for example, refers to one of the first post-occupancy evaluations ever, at a student dormitory at the University of California, Berkeley, in 1967. It revealed that instead of praise for the "showy lounges" and seldom-used recreation rooms, students instead lamented the lack of private and quiet study spaces (p. 65). Both privacy and quiet study spaces imply a sort of spaciousness, or at least not being in the exact same undifferentiated space as everyone else.

Naturally, some regulations exist for how many students should be in a particular learning space. Density, in this sense,

> is an objective measure of spatial constraint. Density – for example, as defined
> by number of persons per unit of space (persons/sq. ft. or its inverse, sq. ft./person) or
> occupants per classroom – must be distinguished from the subjective feeling of
> crowding. (Walden, 2015, p.108)

In chapter 8, I look at the theme of spaciousness as it relates to both the spatial configuration of the Media Hub and users' experience there. Horne Martin (2002) notes that "Child-centred lessons tend to happen in less dense classrooms" (p. 148). Put another way, "Lessons with the highest proportions of pupils on task are the ones that have the most space, and are the least dense" (p. 146); however, as Wulsin (2013) cautions, "Evaluating classroom space solely

based on the number of students that fit in the room given the configuration of the space assumes that all seat-time is created equal" (p. 12). Although Rivlin and Weinstein (1984) also point to studies that show how density can negatively impact learning, they caution that "When combined with major gaps in the age groups studied, the ability to generalize about the impacts of density is sorely constrained" (p. 359). Another reason to be cautious is that students might *like* to be close to one another, but, again, attitudes towards proximity often depend on cultural attitudes or influences, as Hall (1982) claims.

Colour

In the context of educational spaces, Walden (2015) argues that colour can influence the comfort of a space but also students' motivation to learn:

> Spaces perceived as unpleasant and ugly with respect to their color design will have a negative effect on the motivation and desire to learn and perform as well as on well-being. But spaces that feel pleasant, radiating warmth and softness, where colors and forms are well coordinated, will have a strong positive effect. Colors in schools should be friendly and inviting, not uncomfortable or even intimidating. (p. 94)

This advice is somewhat vague, though, or could be problematic given that there is leeway for interpreting colour as "friendly" or "not uncomfortable," and individual responses to colour can vary. Barrett et al. (2015) also argue that there is a correlation between colour and learning. Based on their holistic evidence and design study that looked at nearly 4000 students in 27 UK primary schools over one year, they concluded that, "When viewed as a functional factor impacting on learning, the stimulation from the use of colour was found to be curvilinear, optimally pitched at a mid-level" (p. 36). By "mid-level," they mean walls that are neither too colourful nor too plain; one solution the authors recommend is light-coloured walls with a feature wall using a stronger colour towards the red/orange scale (pp. 36-37).

Although there is no consensus in the literature on learning spaces with regard to the precise effects of colour (Walden 2015), a number of researchers highlight the value of *subtle* uses of colour in order to avoid bland or dull environments, yet still provide appropriate levels of stimulation (Barrett et al., 2015; Gee, 2006; Rivlin & Weinstein, 1984; USCRossier, 2015; Van Note Chism, 2006;). One can combine these findings with Alexander et al.'s (1977) WARM COLORS pattern (see Appendix A and p. 222), keeping in mind that this pattern is part of the larger pattern language that might include other patterns that influence colour

(perception of colour) such as CARPET, THINGS FROM YOUR LIFE[9], ORNAMENT[10], POOLS OF LIGHT, LIGHT ON TWO SIDES OF EVERY ROOM, and the quality of the colour (chromaticity) of artificial light sources.

Implications for teachers

Teacher and other key stakeholder involvement in the design of learning spaces can often lead to acceptance, buy-in, and a sense of ownership or empowerment (Tondeur, Herman, De Buck, & Triquet, 2017; Horton & Kraftl, 2012; Lippman, 2010; Woolner, 2010). Horne Martin (2002) suggests that "every teacher becomes a designer, responsible for preparing the environment to achieve his or her educational purposes" (p. 154), especially when most classrooms have a high flexibility factor; that is, soft architecture, materials which can be relatively easily altered or adapted (p. 146). Brand (1996) calls these materials "Stuff," and they help to constitute the totality of a building along with what he terms: Site, Structure, Skin, Services, Space plan. For Brand, "the real action is all at the levels of Services, Space plan, and Stuff anyway" (p. 158), which was also the case with the Media Hub. The point is that teachers usually do have some control over the "stuff" in a classroom.

Teachers, Horne Martin (2002) argues,

> would like to be autonomous professionals making deliberate choices in their teaching, rather than having their hand forced, and their behavior controlled, by the chance allocation of an inherited classroom. (p. 153)

Having some involvement in the design of the classroom environment can be a leading reason why teachers might report satisfaction with their classrooms (Tondeur et al., 2017). And yet, a chance allocation of an inherited classroom can also have a positive influence, perhaps motivating teachers to do something about the built environment. In their ethnographic study of the evolving materiality (and sociomateriality) of classrooms over time, Tondeur et al. (2017) suggest that the "inconvenient or suboptimal" nature of teachers' inherited or assigned classrooms can even inspire teachers to "actively and creatively" alter their classrooms (p. 292). Ideally, teachers would have a stronger say in the design or

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[9] Alexander argues that decor "is most beautiful when it comes straight from your life—the things you care for, the things that tell your story" (p. 1166).
[10] "All people have the instinct to decorate their surroundings" and ornaments help unify a space when they appear along boundaries in particular, such as doorways and entrances, where different materials or walls meet (pp. 1147-1152).

transformation of their classrooms and other campus spaces, but significant decisions tend to be made at the administrative or management level. Too often, Proshansky (1983) argues, those designing or creating spaces (which implies management) are "concerned almost exclusively with expected effects and almost not at all with *unintended consequences*" (p. 222, emphasis in original). Interestingly, the context of Proshanksy's main argument here is that poorly designed physical spaces have resulted in an environmental crisis in human dignity. Proshansky (1983) adds:

> Not only is it assumed that individuals in time will adapt, but it is also assumed that if they fail to complain or manifest other overt signs of difficulty, then the designed environment has not had any negative effects on the growth and continued existence of the person. (p. 222)

It is ironic that qualities like adaptability, patience, tolerance, and good will (giving management benefit of the doubt), all desirable qualities in a teacher, would work against these same teachers in a situation like Proshansky describes above.

The lack of response to imposed environments calls to mind McGregor's (2004c) reference to an argument by Jacklin (2001) that teaching practices and materiality are reciprocally constituted:

> Teacher education concerns itself with the social and discursive dimension of pedagogy in uncontextualized ways, while teacher practices in schools related to the use of time, space and resources (objects) are seen as *separately the province of school management* [emphasis added]. (pp. 355-356)

This final point could represent a particular challenge for non-traditional teachers in a school that continues to uphold a traditional spatial arrangement. As Bissell (2004) notes, school architecture reinforces traditional work patterns, so teachers with non-traditional work patterns often make significant changes to a classroom in order to support their views of effective teaching, and these

> often drastic and desperate modifications that teachers make also point to the constraints that the physical environment place on teachers whose work patterns, orientations, and priorities are centrally non-traditional. (p. 29)

Lack of control of space seems to deny teachers these crucial avenues for developing effective learning environments that meet teachers' needs and, in particular, non-traditional teaching approaches. Given that administrators control funding and almost always control

decisions for changing the built environment, teachers must wonder what they can actually do to improve their teaching spaces beyond just putting up motivational posters or switching the desk configuration from rows to groups to a horseshoe.

The configuration of a classroom—such as through its soft features or flexibility as mentioned earlier—is also a way for educators to express who they are as teachers, to make personal connections with students, and engage them in learning (Bissell, 2004, p. 29). Similarly, McGregor (2004c) argues:

> The work lives of teachers are shared with objects which help configure and define their work and identity, and are part of spatially constituted subject subcultures. (p. 349)

In chapter 6, I examine how the IT department, as a subject subculture, was able to assert ownership of the Media Hub through technological artefacts, as well as taken-for-granted things of education like posters, that reflected the subject and teachers' interests or identity. Finally, Van Note Chism (2002) makes a forceful argument regarding higher education spaces that could also apply to secondary education spaces: "We know too much about how learning occurs to continue to ignore the ways in which learning spaces are planned, constructed, and maintained" (p. 5). Once teachers better understand how the built environment can influence learning *and* social relations, they then need to advocate for the role they can have (and the role students could have) in the design and configuration of a school's learning spaces, especially if these spaces have been poorly designed, lack vitality, or detract from the teaching and learning experience. Christopher Alexander (Ludden, 2005) offers a brash starting point of sorts: if your work environment is inadequate or lacking, he says, "give yourself permission to say, what the hell am I doing in this place?"

Conclusion

I began this chapter with an overview of sociomaterial perspectives within the arena of spatial theory. I examined assemblages, and what implications this concept might have for both practice and wider issues of space and power, which led to a review of the literature on international schools, from their origins to their governance to their nearly universal use of the International Baccalaureate curriculum. I applied Sklair's (2005, 2010, 2016) work on the relationship between iconic architecture and the transnational capitalist class (TCC) to international schools. In the wider context, international schools, through iconic architecture

and the increasing use of branding and marketing, can be understood as material assemblages. Saturated with power, these assemblages symbolise spaces of privilege and exclusion which serve to project and reinforce both the power and globalising ambitions of the TCC.

I then shifted from a focus on the external architectural appearance and symbolic power of international schools to the built environment *within* these buildings. After presenting some broader ideas on the significance of the built environment, I looked at the history of space and power in education as it relates to the design of schools and classrooms. I next turned to a review of contemporary approaches to learning space design, suggesting that these approaches are, in fact, patterns, although not explicitly presented as such; and sometimes these patterns echo or emulate Alexander et al.'s (1977) patterns. In the next chapter, where I offer my conceptual framing, I will first explain and interrogate Alexander et al.'s (1977) work on pattern language theory, looking at its reception, value, and limitations. I will then argue for interweaving pattern language theory with sociomaterial perspectives, bringing together a practical approach *and* a critical understanding in the pursuit of designing or transforming learning spaces.

Chapter 3: Conceptual Framing—A Sociomaterial Reading of Pattern Language Design

This chapter begins with an overview of Alexander et al.'s (1977) theory of patterns, and how they are expressed, before examining how such patterns combine to form a pattern language, the overarching concept of this theory. Next, the chapter will look at how Alexander et al.'s (1977) *A Pattern Language* text and theory first influenced architects and builders. While this text was once quite influential or popular in the architectural world, it has always had its detractors, and has diminished in popularity since its introduction, sometimes coming under attack for being too prescriptive, authoritarian, or essentialist. I will explore criticisms of the text's theory, and consider both the value and limitations of a pattern language approach to learning space design. Around the same time that the architectural world began to eschew Alexander et al.'s (1977) theory, it was enthusiastically adopted by the software design community. In fact, Alexander et al.'s (1977) pattern language theory has also been applied to a number of other fields or disciplines, albeit with varying degrees of rigour or effectiveness. Overall, though, "Alexander's[11] work has had a profound interdisciplinary reach" (Wania, 2015), which suggests the possible value of applying pattern language theory to contemporary learning space design.

Although Alexander et al.'s (1977) pattern language theory does consider the relationship between the built environment (the material) and the social, it does not fully address or anticipate the contestation of space, or the materiality of everyday things. Sociomaterial theory, as discussed in the preceding chapter, sees the material and social as fully relational. Because the materiality of learning spaces can be overlooked, or taken for granted, sociomaterial perspectives could complement a pattern language design approach. As Fenwick et al. (2011) argue:

> Sociomaterial studies try to reveal the minute dynamics and connections that are constantly enacting the taken-for-granted in educational events: the clothing, timetables, passwords, pencils, windows, stories, plans, buzzers, bubblegum, desks, electricity and lights—not as separate objects, but as continually changing *patterns* [emphasis added] of materiality. (p. vii)

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[11] Christopher Alexander is usually understood as the principal author of pattern language theory, and the literature tends to refer only to him, as will be evident with some of the quotations I provide in this chapter.

Perhaps these "patterns of materiality" could be addressed through a pattern language approach and its infinitely adaptable design solutions; however, because pattern language theory does not sufficiently recognize and anticipate the mutability of space, or the power struggles that are bound up in the kinds of material assemblages alluded to in the quotation above, it is necessary to interweave a sociomaterial approach in the context of learning space design.

Embracing differences

At a glance, these two theories might seem entirely at odds with one another, having key epistemological or ontological differences, but they need not be mutually exclusive in the context of learning space design. As I will argue in this chapter, it is these very differences which make interweaving the theories valuable. Patterns themselves are relational, for they intertwine and combine to form other, larger patterns, all of which address conflicting forces in a particular context. Put another way, they form a network. Alexander et al. (1979) argue:

> What we want to know is just how the structure of the space supports the patterns of events it does, in such a way that if we change the structure of the space, we shall be able to predict what kinds of changes in the patterns of events this change will generate.
>
> In short, we want a theory which presents the interaction of the space and the events, in a clear and unambiguous way. (pp. 83-84)

This quotation reveals an important epistemological difference between pattern language theory and sociomaterial theory. A pattern language looks for clarity, it looks to *facilitate* order; sociomaterial theory does not—it is more concerned with how things *are*. The sociomaterial looks to highlight the fuzzy or ambiguous; it is useful for drawing attention to disorder or flux, showing how the materiality of space and assemblages tend to be temporary or unstable, and how they assemble and reassemble to form that same space. These sociomaterial perspectives can be useful to educators, but a classroom (or a school or a city— whatever one wishes to design or build) must still strive for some order, particularly when striking out. Not unlike sociomaterial theory, though, pattern language theory recognizes that any such order is tenuous or contingent upon the patterns of social activity, so the patterns in a pattern language must always evolve. Alexander et al. (1979) use the word "repair" as a concept to address the idea that "every entity is changing constantly" (p. 485). In the sense of transforming space, then, "the idea of repair is creative, dynamic, open" (p. 485), which speaks to the possibilities of space, a not uncommon refrain in sociomaterial thinking.

Orlikowski (2007) "propose[s] that we recognize that all practices are always and everywhere sociomaterial, and that this sociomateriality is constitutive, shaping the contours and possibilities of everyday organizing" (p. 1444). The final part of this quotation is theoretical, metaphorical, so a teacher looking to design or transform or shape "the contours" of her real-world classroom might ask, in response to these "possibilities of everyday organizing," *What are the practical and concrete methods for shaping and organizing my classroom?* This is a question of how to concretely shape and organize space. The very practical and essential spatial ordering of our built environments cannot be solved with sociomaterial theory; sociomaterial questions are not enough (although we also need such questions, and should be asking them all the time). Educators and teachers wishing to transform learning spaces need answers, or at least the tools—a language—to provide their own answers to establish some material ordering of a classroom or learning space (the built environment). Using a pattern language, it is natural that such an attempt to configure the built environment will have some intended purposes or outcomes that align with practice, so here again is an opportunity to see things through a sociomaterial lens. The questions raised by sociomaterial perspectives can therefore help with, or interrogate, the adaptive process of the pattern language design.

Sociomaterial perspectives also remind one that, whatever one does, there will be unintended consequences, unexpected contestations—so this awareness has the potential to be liberating, freeing educators from the need to design a perfect learning space, one that *must* do this or *must* offer that, or that *must* have an expected educational or pedagogical outcome, which, admittedly, the Media Hub tried to do. Such a narrow focus (like creating a future-proof 21st-century learning space) can prevent one from seeing other possibilities, other trajectories, or even the failures of the space. Taking a pattern language approach and viewing it through a sociomaterial lens still allows any spacing project, any small-"t" transformation, to remain an *attempt* at something good, rather than a quest for absolute certainty. The attempt will have some intentionality, yet recognise, and possibly embrace, the unintended consequences, contestations, and serendipity of space.

One cannot reasonably argue that the built environment in a school, the spatial configuration of a classroom, is random, that it has not been deliberately ordered in some way. The deliberate ordering of classrooms—principally to control individuals—has been firmly established and repeated for centuries, so there are undeniable patterns underpinning the

design of the traditional classroom; however, within that pattern of spatial configuration reside "the uncanny, the difficult and the ill-fitting" (Fenwick et al., 2011) objects and assemblages that challenge and disrupt the spatial patterns—in other words, the agency of the taken-for-granted which cannot be clearly solved or which does not fit a recognizable pattern. To sum, a teacher or school is already using design patterns of a sort, and any pattern language, when viewed through a sociomaterial lens, invites interpretation and interrogation. Ideally, one would begin the design or transformation of a classroom with this knowledge, this sociomaterial perspective, which would go a long way to bringing some levity and relief to the task, knowing that whatever configuration (pattern language) one adopts, sociomaterial forces cannot be contained and will assemble and re-assemble with unintended outcomes and consequences. One can relax knowing that a perfect classroom cannot be achieved; or that any intended design and its related outcomes might not go according to plan.

And yet one can sense something inherently pessimistic in sociomaterial perspectives which tend to focus on seeing these "strains," or "the difficult and the ill-fitting": disharmony rather than harmonious order. An inference one can draw about sociomaterial analysis is that order does not or cannot exist. Such a stance will remain at odds with pattern language theory, which, in its quest to unveil order or a kind of harmony between the material space and the people who use that space, feels inherently optimistic. In chapter 6, for example, I examine how the intended use of a learning space design project can be at odds with its actual use. Having such an awareness of the nature of space is sharpened through the concept of assemblages, which I introduced in chapter 2 (p. 30). An ongoing sociomaterial reading of a pattern language-designed space could identify how material assemblages emerge within the framework of the patterns, how the patterns themselves are part of those assemblages, and how power is expressed or contested because of—or in spite of—those patterns, a situation in the Media Hub that I address in chapter 7.

For those who spend each day in the classroom, a learning space feels real, not theoretical, and to configure that *real* space, one could benefit from the real-world practicality of a pattern language approach. At the same time, the reality of that learning space can also be framed as relational and emergent when viewed through a sociomaterial lens. If space "is always in the process of becoming" (McGregor, 2003, p. 354), always being negotiated, then patterns can be continually evaluated and adjusted to address how this power is negotiated; the development of a pattern language should therefore consider the agency of the taken-for-

granted *things* of learning spaces, which assemble and reassemble with social actors. Combining pattern language and sociomaterial theories could provide a richer reading and understanding of learning space design or transformation, particularly within the iterative framework of a participatory action research approach, such as with the Media Hub project. As Thompson (2015) argues, "A good sociomaterial analysis is descriptive and particular. It highlights what things do and what influence different material assemblages wield" (*Assembly required* section), so a sociomaterial analysis would be useful for describing and highlighting the materiality of patterns, the assemblages in which they are enmeshed, and their influence.

With respect to educational spaces, teachers and other school staff could incorporate or modify some of Alexander et al.'s original patterns, which have a widely applicable quality to them, being infinitely variable. As Alexander et al. (1977) argue, people can—and should— also create and incorporate their own patterns depending upon the unique qualities of whatever space they wish to transform. A pattern language design approach, especially if part of a PAR project such as the Media Hub, could offer a sense of empowerment for educators, and even students, if they are involved with the design process. By creating their own pattern language to configure a learning space, users could draw on each other's knowledge and experience, rather than rely solely upon the advice of "experts" and outsiders. In order to more forcefully make the case for interweaving sociomaterial and pattern language approaches, I will now provide a detailed look at the nature of patterns, and then a critical examination of Alexander's pattern language theory.

Patterns

A pattern, Alexander et al. (1977) explain, "describes a problem which occurs over and over again in our environment, and then describes the core of the solution," which allows for infinite solutions (p. x). These problems could be present when, for example, the built environment does not support the social activities, movement, or enjoyment of users. Alexander et al.'s (1979) process for creating a pattern (p. 253) can be simply expressed as:

Context → System of forces → Configuration (pattern)

In any particular context, a system of forces is at work, often in conflict, so a spatial configuration—pattern—addresses the forces or solves the conflict. As Alexander et al. (1979) argue:

> Each pattern is a generic solution to some system of forces in the world. But the forces are never quite the same. Since the exact configuration of the surroundings at any one place and time is always unique, the configuration of the forces which the system is subject to is also unique—no other system of forces is ever subject to exactly the same configuration of forces. (p. 147)

This explanation suggests the adaptability of patterns. As a potential solution to conflicting forces that are bound up in a space and its social relations, a pattern is meant to be infinitely variable to meet the local configuration and needs of any surrounding. As Alexander et al. (1979) succinctly put it, one should "follow the spirit of the pattern, not the letter" (p. 265).

In *A Pattern Language*, Alexander et al. (1977) argue that they "present one *possible* [emphasis added] pattern language" (p. x) consisting of 253 patterns that they developed over several years of empirical research and field work in which they studied the built environment across various regions and cultures. Their use of the words "one possible" reinforces the idea that patterns represent an underlying generic solution that must adapt to the uniqueness of each setting or system of forces. Even the title itself of this once-influential text—*A Pattern Language*—uses an indefinite article, so the authors are not presenting *the* pattern language (as mentioned, they argue that people can generate their own pattern language); at the same time, Alexander et al. (1977) believe that many of the patterns can be universal in their underlying or core structure. They argue, too, that although some patterns have an "invariant property common to all places which succeed in solving the problem" (p. xii), others do not, and that the patterns, overall, are infinitely variable so that people can solve the problem in their own way, adapting to any local circumstances (pp. xiii-iv); however, much debate centres on the extent to which Alexander et al.'s (1977) theory represents authoritarianism or essentialism, which I will explore later in this chapter.

Expression of a pattern

In *A Pattern Language*, each of the 253 patterns is presented similarly. I shall use the pattern ENTRANCE TRANSITION to illustrate, for it is an element of the built environment with which readers should be familiar. First, a picture provides an architectural example of the pattern:

Figure 1. ENTRANCE TRANSITION of a house. From *A Pattern Language*
(p. 548), by C. Alexander et al., 1977, New York: Oxford University Press.
Copyright 1977 by Oxford University Press.

Second, an introductory paragraph provides the *context* and an explanation of how the pattern
interweaves with other patterns:

> …whatever kind of building or building complex you are making, you
> have a rough position for its major entrances—the gateways to the site
> from MAIN GATEWAYS (53); the entrances to individual buildings from
> FAMILY OF ENTRANCES (102), MAIN ENTRANCE (110). In every case, the
> entrances create a transition between the "outside"—the public world—
> and some less public inner world. If you have HALF-HIDDEN GARDENS
> (111) the gardens help to intensify the beauty of the transition. This
> pattern now elaborates and reinforces the transition which entrances and
> gardens generate. (Alexander et al., 1977, p. 549)

Next, a succinct headline, in bold, presents the *system of forces* in the environment:

> **Buildings, and especially houses, with a graceful transition between
> the street and the inside, are more tranquil than those which open
> directly off the street.** (Alexander et al., 1977, p. 549)

Then, the problem, or system of forces, is explained:

> The experience of entering a building influences the way you feel inside the building. If the transition is too abrupt there is no feeling of arrival, and the inside of the building fails to be an inner sanctum.

An abrupt entrance—no transition.

Figure 2. Faulty ENTRANCE TRANSITION. From *A Pattern Language* (p. 548), by C. Alexander et al., 1977, New York: Oxford University Press. Copyright 1977 by Oxford University Press.

After, there comes a detailed description and exploration of the system of forces, supported by empirical evidence and possible ways (provided through description and images) that the pattern could be or already is successfully expressed:

> Here are four examples of successful entrance transitions.

Each creates the transition with a different combination of elements.

> As you see from these examples, it is possible to make the transition itself in many different physical ways. In some cases, for example, it may be just inside the front door—a kind of entry court, leading to another door or opening that is more definitely inside. In another case, the transition may be formed by a bend in the path that takes you through a gate and brushes past the fuchsia on the way to the door. Or again, you might create a tran-

Figure 3. A successful ENTRANCE TRANSITION. From *A Pattern Language* (p. 551), by C. Alexander et al., 1977, New York: Oxford University Press. Copyright 1977 by Oxford University Press.

Then, the solution (expressed as a pattern) is provided, "which describes the field of the physical and *social relationships* [emphasis added] which are required to solve the stated problem, in the stated context" (Alexander et al.,1977, pp. x-xi); this solution is expressed as an instruction, in bold, so that the readers know exactly what to do in order to create the pattern themselves for their particular context:

> **Make a transition space between the street and the front door. Bring the path which connects street and entrance through this transition space, and mark it with a change of light, a change of sound, a change of direction, a change of surface, a change of level, perhaps by gateways which make a change of enclosure, and above all with a change of view. (**Alexander et al., 1977, p. 552)

The presentation of the pattern ends with a labelled diagram that *shows* the solution:
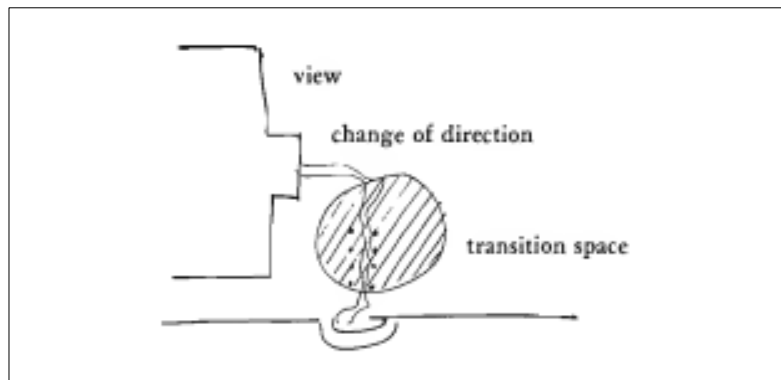
Figure 4. ENTRANCE TRANSITION as solution. From *A Pattern Language* (p. 552), by C. Alexander et al., 1977, New York: Oxford University Press. Copyright 1977 by Oxford University Press.

Finally, a concluding paragraph explains how one might interweave this pattern with other patterns (in the language):

> Emphasize the momentary view which marks the transition by a glimpse of a distant place—ZEN VIEW (134); perhaps make a gateway or a simple garden gate to mark the entrance—GARDEN WALL (173); and emphasize the change of light—TAPESTRY OF LIGHT AND DARK (135), TRELISED WALK (174). The transition runs right up to the front door, up to the ENTRANCE ROOM (130), and marks the beginning of the INTIMACY GRADIENT (127)… (Alexander et al., 1977, p. 552)

This straight-forward format, Alexander et al. (1977) argue, allows one to "present the problem and solution of each pattern in such a way that you can judge for yourself, and modify it, without losing the essence that is central to it" (p. xi). Alexander et al. (1977)

admit that the patterns do not always succeed in solving the problem; some patterns are more successful than others: "Some are more true, more profound, more certain, than others" and they call on people who use their pattern language to "improve these patterns (p. xiv). Even though they believe that the patterns succeed in some cases in finding "a *property* common to *all possible ways* of solving the stated problem" (p. xiv, emphasis in original), Alexander et al. (1977) ultimately view the patterns as hypotheses, and "therefore all tentative, all free to evolve under the impact of new experiences and observation" (p. xv).

A pattern language

A pattern language is structured as a network, which in practice means working through a sequence, always from the larger to smaller patterns, from patterns that create structure to those that embellish that structure, and then on to the patterns that embellish the embellishments (Alexander et al., 1977, p. xviii). In *A Pattern Language,* the patterns are spatially organized from large to small, from towns to public spaces to buildings to homes and to the smaller elements and details of the built environment like light, colour, and ornamentation. Because a pattern language has the structure of a network, generating or altering one pattern usually means the simultaneous introduction or alteration of other patterns, for patterns are meant to overlap and complement each other. Goodyear and Retalis (2010) explain how

> [A] pattern makes some sense on its own, but gains explanatory and practical power when presented as part of a pattern language. A pattern language can be seen as a set of patterns which are connected by being either contexts or embellishments for each other (p. 17),

which echoes Alexander et al.'s (1979) point that "Each pattern helps to sustain other patterns" (p. 131). Alexander et al. (1977) also encourage people to create their own pattern language to suit the specific circumstances of a particular space or building, be it a house, office, or school (p. x), because:

> The people can shape buildings for themselves and have done it for centuries by using languages which I call pattern languages. A pattern language gives each person who uses it the power to create an infinite variety of new and unique buildings, just as his ordinary language gives him the power to create an infinite variety of sentences. (Alexander et al., 1979, p. 167)

The language metaphor highlights the flexibility of the theory, but also implies that the patterns can be easily communicated amongst a group of people. If applied in the context of a

school, a pattern language approach could have implications for a sort of democratisation of learning space design, which aligns well with a PAR methodology. Power is put in the hands of the people—teachers, students, and other stakeholders—rather than residing with (elite) architects and designers, or even administrators in international schools who are likely beholden to the governing boards of the schools. Unsurprisingly, these boards tend to be comprised of members of the TCC, as I will show in chapter 5, whose agenda and vision for what a school should be or look like could be rather different from the vision of the teachers in the classrooms.

As further evidence for this interpretation of a democratising design approach, Alexander et al. (1977) claim that the intention was to publish a book "as a first step in the society-wide process by which people will gradually become conscious of their own pattern languages, and work to improve them" (p. xvi). The pattern language theory partly exposes, they argue, an "archetypal core of all possible pattern languages, which can make people feel alive and human" (p. xvii). Setting aside for the moment the issue of subjective feelings, the idea of archetypes points to an underlying pattern—like the heroic archetype in literature or mythology—that is infinitely variable, always changing, something like Joseph Campbell's (1949) hero with a thousand faces. While Alexander et al.'s (1977) pattern language theory received varying degrees of praise and support in the ensuing decades, some of its claims drew strong criticism as well. I shall now turn to a critical review and interrogation of the theory, showing both its value and shortcomings.

Critical review of a pattern language: influence and limitations
According to Alexander et al. (1977), "patterns are very much alive and evolving…[and] each pattern may be looked upon as a hypothesis like one of the hypotheses of science" (p. xv). Lackney (2015), who adopts a pattern language approach for learning space design, argues that "Patterns are intended to be used, questioned, modified, and reapplied to new circumstances" (p. 187), which implies elements of a scientific method, or at least a move away from what might look like essentialism, for one is testing a *possible* solution, not just prescribing *the* solution. As Elsheshtawy (2001) notes, Alexander's architectural theory looks to discover underlying rules of the built environment, "rules [that] are subject to testing which is similar, but not equal, to the testing of scientific theories" (p. 397). Elsheshtawy (2001) goes on to point out that, by developing his pattern language theory in this manner,

Alexander[12] "approache[d] the question of design in a scientific manner" (p. 396). At the same time, one is dealing with people's responses to the built environment, so the issue of subjectivity is inescapable.

Sharp et al. (2003) argue that "Any patterns effort is a 'work-in-progress' because it is constantly evolving" (p. 327). Jessop (2004) compares the adaptability of Alexander's patterns to a chord sequence that serves as an underlying structure for improvisation, whereby the pattern language allows one "to take from practice the form of a solution but to leave open for the individual how that form is articulated in a particular application" (p. 457). Summarising the overall value of pattern language theory, Bhatt (2010) argues that

> Alexander's *oeuvre* emerges as an insightful experiment that merits recognition for its sustained attention to the relevance of everyday experience in understanding and structuring the built environment. (p. 726, emphasis in original)

The word "experiment" highlights the empirical nature of Alexander's theory, while the adaptability of the patterns—as hypotheses—goes some way to countering the argument, as I will soon detail, that Alexander's theory is too authoritarian or essentialist.

Alexander et al.'s *A Pattern Language* (1977) remains a generally respected text, one that was once considered "invaluable to nonarchitects building their own homes" (Rybczynski, 2009). According to Kohn (2002), "it is among the most widely read architectural books of all time, and is commonly called a design 'bible.'" Kohn (2002) also notes:

> When it appeared in 1977, *Architectural Design* magazine declared that 'every library, every school, every environmental action group, every architect, and every first-year student should have a copy.' (p. 26)

Hamilton (2012) calls it a "delicately observed, deftly reasoned, poetically presented alternative to the sleek cynicisms of modern architecture" (para. 6). Saunders (2002a), editor of *Harvard Review,* has noted that *A Pattern Language*'s "great service is to reveal how certain qualities of experience are encouraged by certain environmental structures" (para. 6), even though the text has now lost influence in academia and the architectural world (Miller, 2012, para. 2; Saunders, 2002a). Saunders (2002a) also describes the text as

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[12] When researchers refer only to Alexander, and I am introducing or discussing their opinions, I have echoed their usage for clarity and consistency in style.

a rich, huge, and instructive set of guidelines. The book's greatest strength is its extensive description of delightful details of ordinary life and places. Alexander and his co-authors did wide-ranging fieldwork, making close observations, collecting photographs, and learning from experience…Many—perhaps most—of its 253 rules present ideas that are familiar to architects but worth being retold. (*A Rich Set of Guidelines section*, para. 1-2)

That this book of familiar architectural guidelines describes the "delightful details of ordinary life and places" has resonance for what could be understood as the delightful details of everyday life in a school, the places and *things* of education that sociomaterial approaches attempt to better understand. While the ideas in *A Pattern Language* may be familiar to architects, the same cannot be said for educators, of course.

Goodyear and Retalis (2010) note how "Alexander's way of presenting a pattern is quite distinctive, though it is not used universally by those who have picked up his core ideas" (p. 16), which suggests both the limitations and the adaptability of a pattern language; however, just because this way of presenting a pattern does not fit one's project does not mean that a pattern language approach is not a valid or useful approach. The presentational flaw that Goodyear and Retalis (2010) point out is the sometimes confusing or ambiguous wording of Alexander's explanation of patterns; confusion could arise over what exactly a solution is, because "In many fields of design practice, a solution is an artefact – it is a new thing, such as a door hinge or the atrium of a building," whereas "In other fields of practice, a solution is a method rather than a thing. It says what has to be done" (p. 15). This confusion is exacerbated through a mixed methodology (method and artefact) at times, the authors note, such as when Alexander says that a solution must be stated in the form of an instruction (p. 15).

While *A Pattern Language* and some of Alexander's other early writing received significant support and praise, some critics and researchers characterize his architectural theories, particularly his more recent theories on the order of space, as anti-modernist (Rybczynski, 2009), or too metaphysical, too akin to Eastern philosophy (Miller, 2003); or too dreamy, grand, authoritarian, and unaccepting of any subjectivity (Saunders, 2002a, 2002b). Bhatt (2010) notes similar general criticism in academia, which views pattern language theory as essentialist or authoritarian or deterministic. And the criticism can be harsher. According to Kohn (2002), "[Alexander's] critics dismiss him as a utopian, a messianic crank, and a contrarian" (p. 27). Saunders (2002b), a fierce critic of Alexander's later work—*The Nature of Order* (2002), a four-volume theoretical work connecting design with natural structures—

argues that to impose an "illusory objectivity" and demand that people build structures accordingly would "dictate a robotic and therefore dead and bad architecture" (para. 4). Elsheshtawy (2001) offers a more balanced critique that speaks simultaneously to the scope and limitations of Alexander's theories:

> One can suggest though that his work is a struggle between two opposing forces: those of the rationalist trying to understand the order of things (structuralist) and the intuitive who relies on personal experience and feelings (phenomenologist). Unifying all this is a widespread yearning for "origins" or an endless reascent toward primordial unity. (p. 396)

The motivation behind some of the criticism of Alexander's theories is worth considering. Rybczynski (2009), for example, argues that Alexander has been least influential in academia perhaps because the theories taught in architectural schools today are more concerned with intellectual abstractions rather than Alexander's pragmatic observation (para. 6). For Kohn (2002), "[Alexander's] great skill is to speak plainly where others speak abstractly, to simplify where most of his colleagues perceive, and generate, only complexity" (p. 29).

Although *A Pattern Language* might have lost its influence in architectural theory and practice in the decades after its publication and initial success, Alexander et al.'s (1977) pattern language theory influenced the New Urbanism movement (Rybczynski, 2009) and other disciplines, perhaps because, as Buendia-Garcia and Benllock-Dualde (2011) suggest, "The use of patterns can be considered as a structured method of describing good design practices in different fields of expertise" (p. 23). Although a pattern language cannot truly grasp the "richness of reality," Jessop (2004) argues, it nevertheless finds a compromise between simplicity and a degree of richness (p. 464).

According to Goodyear and Retalis (2010), "Alexander's ideas have had a profound impact on design thinking and design practices in a number of areas outside architecture" (p. vii), and many researchers note the considerable influence of Alexander's pattern language theory on software design starting from the 1980s (Caulfield, 2014; Coplien, 1996; Goodyear & Retalis, 2010; Jessop, 2004; Kohn, 2012; Rybczynski, 2009). Kohn (2012) writes how Alexander

> is said to have influenced Herbert Simon and other early giants of computer science, and today labs at AT&T, Motorola, and Siemens use his ideas to train their designers, document ideas, and write new software. (pp. 26-27)

Bhatt (2010) also highlights the legacy of Alexander's theory:

> In fact, *A Pattern Language* has found its most compelling success not so much in architectural design but in computer science, within software and object-oriented design, wherein patterns are now recognised as a concrete framework upon which complex design decisions involving highly abstract concepts can be anchored. (p. 714)

In a citation analysis of Alexander's influence, Wania (2015) found 621 citing documents related to computer science versus only 184 such documents related to architecture; however, although Alexander's influence on the discipline of computer science appears to have been significant, Wania (2015) cautions that the results of these analyses suggest that those "in the computing disciplines have taken a reductionist approach instead of a holistic approach when interpreting and applying Alexander's work"; that is, adapting only part of this theory, not the whole, which raises questions about the true influence of his work on computing disciplines (p. 8).

In recent years, Alexander et al.'s (1977) pattern language theory has also found some popularity and application again in a number of disciplines or fields such as pedagogical or learning design (Anthony, 1996; Bergin, 2000; Caulfield, 2014; Iba, Sakamoto, & Miyake, 2011; Jessop, 2004; Lotz, 2014; Sharp et al., 2003), collaborative learning in 3D virtual worlds (Garzotto & Poggi, 2010), VLEs at the Open University (Conole & Jones, 2010), social network analysis (Wakkary, 2002), technology-enhanced learning scenarios (Buendia-Garcia & Benllock-Dualde, 2011), computer-mediated interaction (Lukosch & Schümmer, 2010) and a range of other technology-enhanced learning approaches. Goodyear and Ritalis (2010) point to a number of other contexts or disciplines where pattern languages have been used: human-computer interaction, organizational change, and distributed social activism (p. 18). Although the range of applications for pattern language theory appears impressive, its influence once again does not necessarily equate with a valid adoption of the theoretical framework, particularly because Alexander et al.'s (1977) theory was intended only for architecture and spatial design.

One can see the flexibility or versatility of a pattern language yet also the limitations of applying this theory beyond its architectural roots. Here follows a questionable interpretation

in which Jessop (2004, p. 462) adopts Alexander et al.'s (1977) pattern expression, in this case for the pattern "CULTURE" as generated from a case study analysis in a business school:

PATTERN: CULTURE

Problem	Culture misfit: dominant culture too powerful
Context	The dominant culture is imposing its values on the weaker.
Forces	Both organisations have been driven by different cultures which are distinct, different and succesful in their own contexts. The imposition of the dominant culture is causing or contributing to falling profits and plummeting morale.
Solution	Take the best practices from both cultures.
Resulting Context	Both organisations will have the best elements of both cultures leading to improved work practice and happier staff.
Rationale	This will work because it recognises the distinct features of both organisations which in their own context bought comparative advantage and success.

Figure 5. CULTURE pattern for business school case study. (Jessop, 2004, p. 462)

The notion of "best practices" cannot be objectively decided: who decides what is the "best" practice? And who or what influences that decision? Like Wania's (2015) earlier point about the reductionist approach taken by the computer disciplines, Jessop's (2004) example here of a pattern also does not adopt some key features of Alexander et al.'s (1977) theory, such as images (or sketches) of a faulty version of the pattern, or images of an effective example of the pattern. Crucially, the original patterns are *spatial* and can be expressed as an image to guide the user; Alexander et al. (1977) end each expression of the pattern with a sketch that *shows* how the pattern works. Bhatt (2010) summarises this crucial approach:

> The success of pattern language, however, has been attributed to its accessible diagrams and rich, vivid descriptions, which have the capacity to function as concrete prototypes, projecting a reality grounded in concrete experiences to which users can immediately relate and use to reconfigure the most intimate of their spaces. (p. 715)

Another flaw that exposes the limitations of a broad interpretation of Alexander et al.'s (1977) theory is how Jessop's (2004) CULTURE pattern apparently does not interweave with other patterns, which is a key approach in the original pattern language theory, and an approach that underpinned the design of the Media Hub and our pattern language for it (see Appendix C). Perhaps the greatest flaw with Jessop's (2004) application or interpretation of a pattern language is the notion of "culture" itself, a complex and highly contested term that cannot be solved, or even fully appreciated, in this context. In contrast with this unsuccessful application of a pattern language approach to the multi-faceted concept of CULTURE, one can

perhaps now better appreciate the value of the pattern ENTRANCE TRANSITION presented earlier, which has its grounding as a concrete design element of the built environment. Learning space design therefore seems a logical field in which one could find a valid and successful application of pattern language theory.

Pattern language and learning space design

Some learning space design researchers or experts advocate designs (patterns of design) that one would easily recognize in Alexander et al.'s (1977) patterns, such as the importance of realms of privacy, or corridors with natural light (CIC, 2014; Oblinger, 2006; Woolner, 2011). Others have praised (Brand, 1994), modified, or built upon the patterns (Lippman, 2012; Tanner, 2000). Lippman (2012), in fact, offers his own *pattern language* for school design, directly invoking Alexander et al.'s (1977) work, while Tanner (2000), through the University of Georgia's School Design and Planning Laboratory, reviews the literature to measure the prevalence of design *patterns* in schools; and from there attempts to measure the effects on learning of this "pattern language," as he calls it, in a sample of forty-four elementary schools in thirteen districts in the state of Georgia, USA.

Lackney (2015), Lipmann (2010), Moore, Piwoni, and Kennedy (1989), as well as the University of Southern California Rossier, (USCRossier 2019) each have applied patterns or pattern language theory to the design of schools and learning spaces. Tanner (2009), in a study of over 10 000 grade 5 students across 71 schools in Iowa, USA, examined the effect of elements of the built environment on student academic achievement; he found a correlation between improved standardized test scores and three key design patterns, MOVEMENT AND CIRCULATION, DAY LIGHTING, and VIEWS, that had been adapted from Alexander et al.'s (1977) patterns. Explicitly connecting the pattern VIEWS with Alexander et al.'s (1977) ZEN VIEW, Tanner also acknowledges the paucity of quantitative evidence on the topic or the pattern VIEWS in the literature (p. 394). Still, Tanner's (2009) own findings indicate that the three patterns above correlated with a significant effect in the following areas: reading vocabulary, reading comprehension, language arts, mathematics, and science (p. 381). Wulsin (2013) also stresses the value of being able to change one's perspective in the classroom, from looking at one's own desk to other people to trees outside (p. 10), and that students need a distant focal point (p. 11).

In Alexander et al.'s (1977) theoretical approach, each pattern interweaves with other patterns to form a larger pattern, thus ultimately becoming a pattern language, which is an application or interpretation echoed by Barrett et al. (2017), who identify key factors of the built environment that appear to support improvement in student learning. In their holistic, multi-level study covering 3766 primary students in 152 classrooms across 27 schools in the UK, the authors note that it is the *combination* (interweaving) of different design factors—*patterns*, really—that results in a statistically strong correlation. For the "Connection" factor, for example, the authors point out the importance of corridor width, explicitly referring to one of Alexander et al.'s (1977) patterns. Under "Individualization," one of three over-arching design principles, Barrett et al. (2015), in an earlier paper, note the importance of the "flexibility" factor in a classroom, arguing for "Well-defined learning zones that facilitate age-appropriate learning options, plus a big wall area for display" (p. 131). What follows is a hypothetical classroom which demonstrates the flexibility factor:

A classroom with several good features of Flexibility: defined learning zones, big wall area and an attached breakout space.
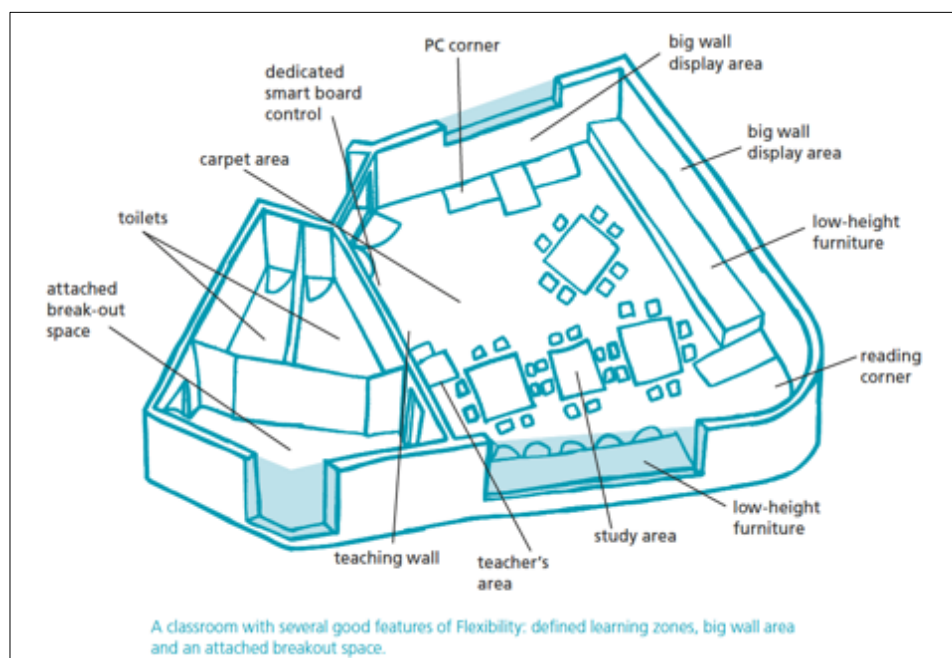
Figure 6. Example of a *Flexible* classroom (Barrett et al. 2015, p. 29)

The authors' recommendations represent design patterns, of course, ones that could be replicated, though the suggestion is broad enough to adapt to local contexts—teachers could determine exactly where to create the "big wall area for display" and how it should look. One need not construct a classroom identical to the example here, because each room or space is unique, and therefore requires different patterns that would make up the larger pattern language. To remind, patterns, as Alexander et al. (1977, 1979) advocate, can be infinitely

varied or adapted. This example of the "Clever Classroom" shows merely how one might *possibly* configure a classroom, which Barret et al. (2017) acknowledge:

> It should be clear that the evidence base created through this research raises multiple issues, but resolving these into a coherent design in a particular location still remains a significant design challenge. (p. 445)

What the findings and recommendations from their study do not really consider, however, are the wider sociomaterial implications of design patterns; for example, the way users will contest or negotiate power in relation to the spatial configuration; or how that negotiation might alter the space, perhaps via the taken-for-granted *things* and social forces of education, over time.

Other researchers in the field of learning space design turn to design patterns in a more explicit manner. Lippman (2010) presents his own pattern language for school design, directly invoking Alexander et al.'s (1977) work. He recommends patterns such as SCIENCE PRECINCT, MEDIA PRECINCT, NEIGHBORHOOD, MAIN ENTRANCE, PORCH, and TRANSPARENCY (being able to see into classrooms). Even though Lippman (2010) provides images of design examples of his case studies of schools, the patterns are not meant to be *identically* reproduced in other schools, just as Alexander et al.'s (1977) patterns are not meant to be identically reproduced in every town and building, for each context has its own unique design needs and conflicting forces.

Instead, a design pattern can provide a sort of underlying template of what works well in light of contemporary research on learning space design; a pattern is a general approach that still must be adapted to suit the local context. For example, it is reasonable to say that all schools will have a MAIN ENTRANCE (one of Lippman's patterns mentioned above). Lippman (2010) suggests that the main administrative offices should be in the immediate area of the main entrance, a pattern that makes sense because visitors must sign in there, or unwelcome visitors can be challenged before reaching areas with children. This zone acts as a safety buffer. How schools configure their administrative offices near the main entrance, of course, is up to them, but they will likely develop their own smaller patterns that make up the large pattern MAIN ENTRANCE for their particular context. In comparison, a faulty or rather poor MAIN ENTRANCE pattern would open straight into a classroom or the gymnasium.

Moore et al. (1989), although they do not explicitly reference Alexander et al., created a "pattern language for children's environments," specifically for child care centres, noting that their patterns were built on the developmental theories of Jean Piaget and Heinz Werner (p. 56). Moore, in fact, published a seven-volume pattern language text in 1979, two years after Alexander et al.'s (1977) *A Pattern Language*. Other researchers and leaders in the field of learning space design might not explicitly refer to Alexander et al. (1977) or pattern language theory, but their findings nevertheless discuss or suggest design solutions which could easily be considered patterns, ones that purport to represent good practice (CIC, 2014; Oblinger, 2006; Woolner, 2011) and therefore are meant to be replicated in schools all over.

If, as Alexander et al. (1977) claim, patterns provide solutions (through spatial configurations) to conflicting systems of forces in the human environment, it is reasonable to argue that this human environment must also include conflicting systems of forces in education. Because buildings define and affect the activities occurring within, they can possibly alter learning in a number of ways: through parameters for the kinds of teaching possible, the promotion of social interaction, the creation of overall atmosphere, the provision of self-actualisation opportunities, and the impact of health and safety (Nuikkinen, 2011, pp. 12-13). Goodyear and Retalis (2010) believe that a pattern language approach means "that a project of worthwhile scale can be tackled" (p. 17). Moreover, according to Lackney (2015), "The process of developing patterns for school design includes the use of both empirical and practical knowledge" (p. 187). Anticipating possible criticism of the analysis of patterns as being "subjective, biased by prevailing trends and unscientific," Lackney (2015) also argues that patterns as hypotheses can be tested by looking to architects' and educators' experiential reflections, empirical studies, and best practice (p. 189). While the notion of "best" practice is problematic, to draw on empirical studies does point to a degree of scientific rigour, as discussed in the previous section, and maps well with the approach in Barrett et al.'s (2015) large-scale holistic study.

Interrogating a pattern language with sociomaterial perspectives
This review of patterns and pattern language showed that Alexander et al.'s (1977) pattern language theory, although still contentious, continues to influence thinkers, researchers, and designers in a number of fields, including learning space design. Obviously, educators would benefit from clear, practical guidance for the design and transformation of learning spaces, and a pattern language approach appears to offer just that; however, this practical guidance

might not be enough to address the complexity of the interplay between the material and the social. A solution that I propose is to apply a sociomaterial reading to a learning space design project that is using a pattern language framework. Filling a gap that a pattern language approach does not address, a sociomaterial reading would elucidate how the material world acts upon humans and their social relations, how power is articulated, and how that power is constantly being negotiated—but, again, in the context of a pattern language approach that offers *practical* design solutions to everyday spacing issues in an educational context.

A sociomaterial reading of space therefore interrogates pattern language theory, offering a way to critically examine how these patterns (material elements and spatial ordering of the built environment) might influence how students feel, act, and even learn, in a particular space; or how the patterns might alter teaching practice. A sociomaterial reading would interrogate the extent to which the patterns, and the material objects bound up in these patterns, can influence or dictate where people will be, where they will sit, how and when they might move, and how social relations are intertwined in the spatial. Each of these facets has implications for how the users of the space might negotiate power in that particular setting.

Still, one has to begin somewhere in the real world of classroom design, so a pattern language approach can provide this starting point. It represents a tool with which one might conceptualize and configure a learning space. What I will later argue is that, ideally, one would approach or commence a design project by already drawing on sociomaterial perspectives, rather than only applying them afterwards. In other words, the two theories need not be mutually exclusive. The sociomaterial reading of a pattern language-designed space can provide an ongoing and critical interpretation of how everyday material objects in educational spaces contribute to the kind of learning space that emerges, students' learning experience, and how patterns and material objects are bound up in social relations. In addition, a participatory action research (PAR) approach, such as the Media Hub project, could complement this sociomaterial reading of a pattern language-design approach, thus ensuring ongoing reflection and micro adjustments. The result, one can imagine, would be improved iterations of a learning space.

In her review of Alexander's influence and relevance, Bhatt (2010) concludes that Alexander's pattern language "grant[s] everyday users the agency to choose how to design

their own spaces"; however, this notion of agency, Bhatt says, is part of the larger societal trend of post-modern determinism and reflexivity (p. 726). Bhatt's framing of the value of Alexander's theory only considers human agency here, whereas sociomaterial theory argues that the material world also has agency. Still, a pattern language approach to learning space design could provide guidance—a framework—for a much-needed practical solution for educators who wish to design or transform a learning space, particularly a small-scale project, as I present in this thesis; however, Alexander et al.'s (1977) pattern language theory does not fully anticipate or address the complex issues of power inherent in the sometimes-messy and often-complicated real world of education. Viewing a pattern language-design approach through a sociomaterial lens could inform ongoing adjustments to the patterns in order to address the taken-for-granted materiality of educational spaces—specifically, the unexpected power struggles and contestations of space expressed through material assemblages, patterns of relations, and the mundane *things* of educational spaces.

Sociomaterial approaches to education, Fenwick et al. (2011) argue, "offer resources to consider systematically both the *patterns* [emphasis added] and the unpredictability that make educational activity possible" (p. 2). These "patterns" of educational activity—even if the word "patterns" somehow extends here to the concept of *assemblages*—would likely be bound up with any patterns of spatial configuration. Rather than being merely an examination of how classroom spaces are designed and used, the sociomaterial can offer, "more critically, a theoretical tool for analysis" that considers how spaces become learning spaces, and

> how they are constituted in ways that enable or inhibit learning, create inequities or exclusions, or open and limit possibilities for new practices and knowledge. (Fenwick et al., 2011, p. 11)

This relationship between power, the social, and the "the ordering of the human and non-human in space-time" (Fenwick et al., 2011, p. 129) must still involve a *material* ordering of spaces, though. Design patterns, as concrete configurations of the built environment, offer potential solutions to the everyday conflicts we find ourselves in with respect to the spatial environment (Alexander et al., 1979, p. 380). In what could be considered pre-echoes of the sociomaterial, the patterns have the potential to alter how people act, interact, or feel—and perhaps even the power to influence students' learning experience, as I examine in chapters 7 and 8. Again, a sociomaterial lens would see that the patterns, as part of a pattern language, are bound up in assemblages of human and non-human; for example, a particular agenda or

pedagogical philosophy, driven by the needs or ambitions of the TCC, can drive the goings-on in an international school, which in turn can influence curricula, what building projects are funded, what design (iconic) a school will have, how that school will be branded and presented online or in public, the teachers who are hired (and whatever pedagogical background they bring), and so on. At the very local level, objects may come into the space, become part of the patterns or disrupt them; such objects—the material *things* of education—will likely have unintended effects regarding the efficacy and durability of the patterns; finally, people's behaviour and experience could be altered in unforeseen ways.

While the two theories are in some ways at odds with one another epistemologically or ontologically, in the context of learning space design they need not be mutually exclusive. I am arguing that both theories can be—should be—applied to the design or transformation of a learning space: pattern language theory for the practical arrangement of a classroom, a spatial configuration that will be based on an inherited built environment in the case of most small-"t" transformations; sociomaterial theory for the ongoing interrogation of the pattern language theory, providing a lens through which one can see contestations of space, the assembling and re-assembling of human and non-human actors. This sociomaterial perspective offers a method to continually interrogate *and* inform adjustments to the pattern language, whose nature is a flexible and evolving language of spatial design.

Interrogating a pattern language theory with a sociomaterial perspective could offer a richer analysis and understanding of how learning spaces function, which in turn could inform decisions on how to design more effective learning spaces in a local context for a particular group of people (such as TCKs). Scott and Orlikowski (2013), for example, note how the

> motivation behind [their] exploration of sociomateriality is the belief, shared with many, that the complex challenges in the world overflow any one disciplinary or theoretical approach. (p. 77)

Elsheshtawy (2001) argues that Alexander's pattern language theory is connected primarily with Piaget's structuralism and Heidegger's phenomenology, yet such influences do not necessarily undermine his theory, for "one of the criteria that strengthen a theory is the degree to which it connects to other theoretical approaches" (p. 395). In this sense of drawing on more than one discipline or theoretical approach, a pattern language approach would inform the practical design needs of a learning space; a sociomaterial perspective would examine and

question how that learning space becomes a learning space, how patterns might impact the experience of learning or one's perception of place, or how power is negotiated in the context of such design patterns. Ideally, this process would go back and forth, one informing the other, such as in a PAR approach.

To see how Alexander et al.'s (1977) pattern language theory might be interwoven with the sociomaterial, it is worth returning to an example of a specific pattern. To remind, in a specific or unique context, patterns address conflicting forces: human needs or desires that are at odds with the built environment. The patterns provide solutions (the pattern is the expression of that solution) to these forces through the material ordering or configuration of space. This is a recognition that the built environment—arrangement of space and the materials within it—can influence humans and our responses to that space. While one could argue that this viewpoint privileges humans, being centred on a human response, it still recognises that the material world has agency, and is not separate from humans, but rather intimately bound up in the space and one's lifeworld. Objects have agency, but they do not have feelings, emotional responses to other objects or their environment. Education is still about human beings, so we should not stray too far along the sociomaterial continuum in the quest to foreground the material. After all, the word sociomaterial equally contains 'social' and 'material'.

A pattern can be simply expressed as:

Context → System of forces → Configuration (pattern)

What follows is another detailed example of how to express a pattern, in this case POOLS OF LIGHT. Alexander et al. (1977) begin with the context and problem, and end by providing the pattern as a solution to this problem. They write:

> **Uniform illumination—the sweetheart of the lighting engineers— serves no useful purpose whatsoever. In fact, it destroys the social nature of space, and makes people feel disoriented and unbounded[...]**

> Therefore:

> **Place the lights low, and apart, to form individual pools of light which encompass chairs and tables like bubbles to reinforce the social**

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character of the spaces which they form. Remember that you can't have pools of light without the darker places in between. (pp. 1160, 1162, bold in original)

As for all patterns in *A Pattern Language*, Alexander et al. (1977) also note how POOLS OF LIGHT could be reinforced by interweaving other patterns like ALCOVES, WORKPLACE ENCLOSURE, DIFFERENT CHAIRS, or SITTING CIRCLE. The authors end with a labelled diagram of the pattern for guidance and clarity:
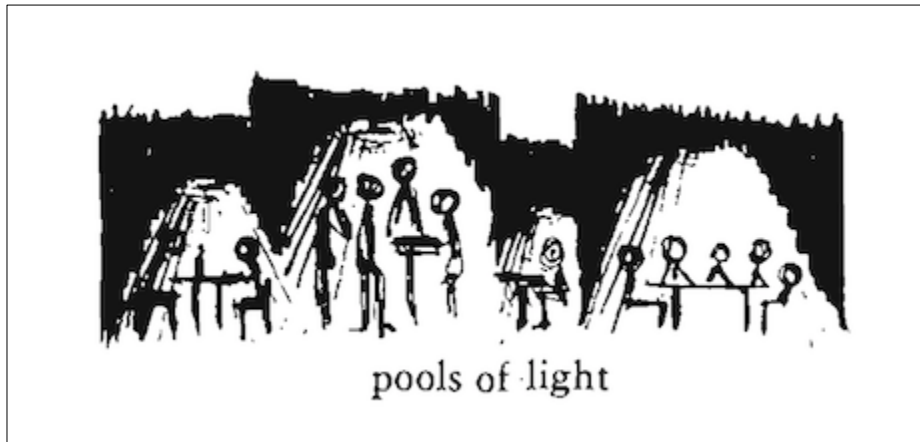
Figure 7. POOLS OF LIGHT pattern. (Alexander et al., 1977, p. 1162)

Through this detailed expression of the pattern POOLS OF LIGHT, one should begin to see more clearly that patterns are spatial configurations that can both influence and are influenced by individuals and their social relations. In this sense, patterns could be seen (through a sociomaterial lens) as assemblages; patterns, in some ways, anticipate the interplay between the social and the material because they attempt to provide solutions to conflicting forces in a particular context through the specific ordering of material space. Conflicting forces could include who has access to spaces in a school, or how students could be controlled, disciplined, or immobilized through networks of spatial relations. Elsheshtawy (2001) argues:

> The uniqueness of Alexander's theory lies in his attempt to relate 'patterns of events' —behavioral variables—to actual geometric patterns. Thus a link is established between social and physical aspects of the environment. (p. 398)

In the context of learning spaces, some extant design patterns simply represent common approaches or good practice (and they might map well onto some of Alexander et al.'s patterns), yet others echo design patterns from the 18th or 19th century (desks in rows, teacher at the front of the classroom) that reinforce traditional power structures. But, of course, a sociomaterial interpretation of space goes further, recognizing, for example, that "Particular

places such as classrooms can be considered...*knots* of things*, practices and mobilities, and not simply as isolated islands" (Fenwick et al., 2011, pp. 152-153, emphasis in original). The authors' point speaks to the complexity of space, whatever its spatial configuration, whatever the pattern language.

The practical and the theoretical

The structure of a building, Alexander et al. (1979) point out,

> is made up of certain concrete elements, with every element associated with a certain pattern of events. On the geometric level, we see certain physical elements repeating endlessly, combined in an almost endless variety of combinations. (p. 82)

The authors give the example of a gothic cathedral, which "is made of a nave, aisles, west door, transept, choir, apse, ambulatory, columns, windows, buttresses, vaults, ribs, window tracery" (p. 82). And yet, Alexander et al. (1979) suggest, in addition to an endless repetition of these elements, there is an endless variation to them, for each Gothic cathedral has a slightly different nave, slightly different aisles (p. 82). In a similar vein, a school building has classrooms, doors, windows, desks, chairs, student work on walls, boards for writing on. And yet each school building is slightly different in its arrangement of these elements; moreover, these material elements are relational—they are bound up in the social.

Patterns, then, represent a concrete and practical approach to learning space design whereas the sociomaterial can examine the efficacy and effects—intended or not—of these patterns that are meant to give order and shape to the physical environment (which includes the everyday objects within that environment). A sociomaterial perspective recognizes networks of relationships in that learning space, as well as the negotiations and contestations played out there, what kind of learning occurs, or who has access to that learning. The patterns are spatial configurations of the built environment, which can affect how people behave and feel in that space, so these patterns must certainly intertwine with sociomaterial forces like the negotiation of power. Still, applying a sociomaterial reading of a pattern language-informed space is necessary in order to fully recognise this negotiation of power.

One can also hear echoes of the sociomaterial in the following argument by Alexander et al. (1979):

> The action and the space are indivisible. The action is supported by this [particular]

> kind of space. The space supports this [particular] kind of action. The two form a unit, a pattern of events in space. (p. 70)

Still, explicitly applying a sociomaterial reading would allow for a richer and more nuanced understanding of a learning space, for sociomaterial approaches, as Mulcahy (2012) argues, can

> account for how materials participate in pedagogic practice and for what is performed through this participation (e.g. corporeal capacity, changed power relations regarding the subjectivities of teacher and learner and teaching and learning). (p. 13)

In my data chapters, I examine such power relations in the context of how a pattern language approach informed the Media Hub's design.

Patterns, as solutions to conflicting forces in a particular environment, are arrangements of material objects, architectural elements, and people; in a sense, they could be viewed as an assemblage; however, patterns and a wider pattern language, although growing out of local forces, tend to have a very deliberate arrangement, which is at odds with the sociomaterial view of assemblages. Patterns, meant to reflect and facilitate the patterns of human behaviour (the social), are intended to be somewhat stable—at least temporarily, for patterns are also infinitely variable and meant to constantly evolve, adapting to the patterns of human behaviour. If such a material arrangement of the environment can impact how humans might feel or move or act in a space, then patterns could have a kind of agency. An assemblage for Law (2004), though:

> is a process of bundling, of assembling, or better of recursive self-assembling in which the elements put together are not fixed in shape, do not belong to a larger pre-given list but are constructed at least in part as they are entangled together. This means that there can be no fixed formula or general rules for determining good and bad bundles. (p. 42)

Here, then, is an example of where pattern language and sociomaterial theories clearly diverge, with assemblages understood as not being constructed but rather entangled, of not being fixed in shape (or at least the attempt to fix a shape, as compared with patterns). The argument that there "can be no fixed formula or general rules" for value judgements about these bundles (assemblages) appears to contradict pattern language theory, which seeks to create and discover patterns that succeed in resolving conflicting forces in the built environment, solutions that might be considered *good*.

Law (2004) describes how assemblages come to be through an "uncertain and unfolding process" (p. 41), adding: "it needs to be understood as a tentative and hesitant unfolding, that is at most only very partially under any form of deliberate control (pp. 41-42). Perhaps a comparison can be made with patterns, for pattern language theory also draws on a concept of unfolding. Regarding the differentiation of space, Alexander et al. (1979) argue:

> Within this process, every individual act of building is a process in which space gets differentiated. It is not a process of addition, in which preformed parts are combined to create a whole, but a *process of unfolding*" (p. xiii, emphasis added).

For larger patterns, ones that govern neighbourhoods, for example, Alexander et al. (1977) argue that they should be implemented in a "piecemeal" process, where "they can emerge gradually and organically, almost of their own accord" (p. 3), a sensibility which echoes Law's point above about the absence of deliberate control as relates to assemblages. Patterns represent attempts to find, or reveal, a kind of order (which is necessary in a school classroom, for example), albeit through an organic or unfolding process. One key difference between the theories is this: a pattern language seeks a unified whole; the sociomaterial is concerned with fragments. Again, the theories need not be epistemologically or ontologically identical in order for both to be valid or applicable in the case of learning space design. The differences are sometimes only a matter of degree rather than kind, and any tensions should be welcome, for the goal is to interrogate a pattern language through the sociomaterial in the quest to design learning spaces that better suit the needs and wishes of those actually using these spaces.

Conclusion

This chapter started with an overview of Alexander et al.'s (1977) pattern language theory, looking at its architectural context and reception, a reception that has had little consensus, for although the pattern language theory was once well-received and still admired, critics often accuse Alexander (specifically) of authoritarianism or essentialism. Next, the chapter considered the influence of pattern language theory beyond architecture, with the strongest influence found in computer software design. Other fields, such as learning space design, have shown the usefulness of a pattern language approach, but there are limitations to the theory's applicability beyond the built environment, with some adaptations straying too far from the theory's original approach. Still, for the software and computing world, Alexander and his theories retain their status. Goodyear (2010) claims that Alexander's "design patterns

can help designers in bridging between theory, empirical evidence and experiences (on the one hand) and the practical problems of design (on the other)" (p. vii). Although the context here is design patterns for technology-enhanced learning, Goodyear's (2010) support for adapting pattern language captures the essence of my attempt to connect Alexander et al.'s (1977) patterns with sociomaterial perspectives. Their pattern language theory has the potential to provide adaptive solutions to the practical problems of learning space design, bridging spatial configuration, the sociomaterial, and even one's experience of space and place.

I made the case for applying a sociomaterial reading to a pattern language design approach; more precisely it is about developing a pattern language in tandem with current ideas on learning space design—through the lens of the sociomaterial. This thesis, in other words, is a sociomaterial analysis of how pattern language theory can be applied to learning space design. A sociomaterial reading of a learning space—in all its materiality, including how power is negotiated or expressed—could inform the identification and creation of patterns. Once a particular pattern is established, or unfolds, one can continue to evaluate— interrogate—its influence or effectiveness by viewing it through a sociomaterial lens. In this respect, one is still addressing the very practical matter of the real-world configuration of the built environment, yet achieving a richer understanding of the complex nature of learning spaces.

Applying sociomaterial perspectives to pattern language approaches for learning space design could help educators anticipate, and reflect on, how power is articulated through the material, through the mundane and everyday things of educational spaces. One could view patterns as a starting point for learning space design, but the application of sociomaterial perspectives should inform how those patterns are created *and* how they are continually adjusted. In this sense, an interwoven approach is like a story beginning *in media res*, for there is no clear absolute beginning. A pattern language approach provides *possible* solutions to the practical demands of creating or transforming a classroom, but one should always treat the patterns as evolving hypotheses, which is the point of interweaving a sociomaterial approach that tends to "offer questions rather than solutions" (Fenwick et al., 2011, p. 182). If a sociomaterial approach to the design of learning spaces can continually pose questions about how power is negotiated, or what constitutes a learning space, then perhaps a pattern language approach to learning space design can provide some answers to these questions.

Like sociomaterial perspectives, Alexander et al.'s (1979) pattern language theory recognises the ever-changing nature of space, so "*It is therefore necessary to keep changing the buildings according to the real events which actually happen there*" (p. 480, emphasis in original). The quotation aligns well with sociomaterial perspectives which are necessary to bring to the foreground not only the building's agency but also the agency of the objects within, and the contestations that can arise regardless of one's intentions. Rather than the theories being seen as mutually exclusive, instead their epistemological and ontological differences can be seen as a strength, a way to fill gaps in each theory in the context of learning space design; however, the main thrust of this approach is to interrogate pattern language through the sociomaterial. The Media Hub project, a small-scale or small-"t" transformation, represented a way to experiment with this conceptual framework—a sociomaterial reading of a pattern language-designed space—in a way that also involved the participation of a number of teachers and even students. The project offered opportunities for change and empowerment, which is why a participatory action research (PAR) approach was central to my methodology, as I shall now detail in the next chapter.

Chapter 4: Research Design

In light of the overarching theme of space and power for this thesis, and how my conceptual framework applies a sociomaterial reading to a pattern language design of an ICT learning space, I was drawn to an ethnographic methodology, which would allow me to investigate how the people in a school can both create and use a transformed classroom. From the outset, a participatory action research (PAR) approach presented itself as the logical choice because of the nature of this spatial transformation project: it was a collaborative, teacher-led initiative that was meant to effect change in our school for both teachers and students, providing a sense of engagement and empowerment. In this chapter, I first provide an overview of PAR, its origins, its value to my project compared with other ethnographic methodology, and how it underpinned the Media Hub's creation and ongoing transformation. I then detail the participants for my study, from their selection to their different roles in this project, before covering the ethical approval process and potential ethical concerns. Next, I present my qualitative data collection methods, which focused on interviews with participants, observations of lessons and activity in the space, and visual ethnography. I also note challenges to data collection that related primarily to my dual role as both researcher and full-time teacher, as well as the two-year sabbatical I took that removed me as leader of the Media Hub project. Finally, I discuss my approaches to data analysis, ending with a brief discussion of my attempt to draw on a few points of quantitative data.

Participatory action research

Epistemology, broadly speaking, "is about issues having to do with the creation and dissemination of knowledge in particular areas of inquiry" (Stanford, 2019). It centres on questions such as: "What are the necessary and sufficient conditions of knowledge? What are its sources? What is its structure, and what are its limits?" (Stanford, 2019). One can see the epistemological underpinnings of participatory action research (PAR), and how it addresses such questions, in McIntyre's (2007) definition of the field:

> [PAR is] an approach characterized by the active participation of researchers and participants in the coconstruction of knowledge; the promotion of self- and critical awareness that leads to individual, collective, and/or social change; and an emphasis on a colearning process where researchers and participants plan, implement, and establish a process for disseminating information gathered in the research project. (p. 5)

Knowledge, then, is co-constructed by researcher and participant, who then critically test and, ultimately, share that knowledge. In PAR, researchers work with participants; each PAR project is tailored to fit the wishes of these research participants, and action is taken by participants based on topics that grow out of the PAR process (McIntyre, 2007, p. 5). The purpose of PAR

> is to change social practices, including research practice itself, to make them more rational and reasonable, more productive and sustainable, and more just and inclusive. (Kemmis, McTaggart, and Nixon, 2014, pp. 2-3)

The authors later add that PAR "expresses a commitment to bring together broad social analysis, the self-reflective collective self-study of practice, and transformational action to improve things" (p 12). PAR, then, serves a democratizing purpose; and, as the field continues to expand and diversify, the goal of social justice is a main focus (Kemmis et al., 2014, p 17).

McIntyre (2000) highlights the following tenets of PAR:

> (1) the collective investigation of a problem, (2) the reliance on indigenous knowledge to better understand that problem, and (3) the desire to take individual and/or collective action to deal with the stated problem. (p. 128)

Collective investigation and a reliance on "indigenous" knowledge signal PAR's epistemological underpinning. Not only can anyone be a source of knowledge but also the implication is that this indigenous knowledge is valued. McIntyre (2007) also adds a fourth tenet of PAR: "the building of alliances between researchers and participants in the planning, implementation, and disseminating of the research process (p. 1). The idea of an alliance— from start to finish—seems crucial to what PAR represents. Whyte, Greenwood, and Lazes (1991/2011) also highlight how practitioners are engaged throughout the stages of a project, from initial design to final conclusions and actions (p. 7), an approach, as I detail below, to which the Media Hub project adhered.

Under a PAR approach, research practitioners belong to the organization, setting, or team that is the subject of the research (Oxford Reference Online, 2018). Kemmis et al. (2014) note that a diverse and extensive list of people, from nurses to community educators to teachers to farmers to managers, use PAR "to transform their practices, their understandings of their practices, and the conditions under which they practice" (p. 21). To that end, PAR follows

what is commonly known as the 'self-reflective spiral' of action research (Kemmis et al., 2014):

> • *planning* a change,
> • *acting* and *observing* the process and consequences of the change,
> • *reflecting* on these processes and consequences, and then
> • *re-planning*,
> • *acting* and *observing*,
> • *reflecting*, and so on… (p. 18, emphasis in original)

Kemmis et al. (2014) add, though, that this "process of action research is only poorly described in terms of a mechanical sequence of steps" (p. 19). The reality of action research, they argue, is a little messier, for "stages overlap, and initial plans quickly become obsolete in the light of learning from experience. In reality, the process is likely to be more fluid, open and responsive" (Kemmis et al., 2014, p. 19). Because I had a multi-faceted role as teacher, project leader, and researcher, it is not surprising that the stages of the Media Hub project frequently overlapped, for the practical demands of being a teacher and the sometimes-messy business of school disrupted or made plans obsolete at times, driving a more responsive process.

Origins of PAR

Whyte et al. (1991/2011) point out that,

> Long before the term became popular, social anthropologists and sociologists were carrying out projects that fit under the label of *participatory research* (p. 9, emphasis in original).

According to McIntyre (2007), "The originators of the principles, methodologies, epistemologies, and characterizations that inform PAR projects are worldwide and span many decades" (p. 1). In addition to highlighting a number of such examples of PAR from the late 1970s to the 1980s (p. 1), McIntyre (2007) also points to critical theory, feminist theories, and, importantly, the work of Freire as key influences on PAR, particularly Freire's "belief in critical reflection as essential for individual and social change" (p. 3). For Whyte et al. (1991/2011),

> PAR evolved out of three streams of intellectual development and action:
> (1) social research methodology,
> (2) participation in decision making by low-ranking people in organizations and communities, and
> (3) sociotechnical systems thinking regarding organizational behavior. (p. 7)

Kemmis et al. (2014) claim that "Critical participatory action research is identified most closely with the work of a group of staff at Deakin University in Geelong Australia during the 1980s and 1990s" (p. 16). The authors also note that, in addition to being well represented in the literature on educational action research, PAR

> emerges from dissatisfactions with classroom action research which does typically not take a broad view of the role of the relationship between education and social change. (Kemmis et al., 2014, p 12)

McIntyre (2007) highlights yet another influence on PAR—the tradition of action research, which was developed by Lewin in the 1940s; however, Lewinian action research, Kemmis et al. (2014) argue, over-simplified and gave too much significance to the "'self-reflective spiral'" of planning, action, reflecting, and so forth (p. 9).

PAR versus other research approaches

A key advantage of PAR over traditional action research, for example, is the active rather than passive involvement of participants. For Whyte et al. (1991/2011), the

> Lewinian view of action research also—in practice—preserved the role of the non-participant researcher as a facilitator of the research process and the involvement of different kinds of participants in the research. This preservation of the role of the 'outside' researcher in action research has been a feature of a great deal of action research since the mid-twentieth century. (p. 9)

Whyte et al. (1991/2011) also note how PAR contrasts with the conventional model of pure research "in which members of organizations and communities are treated as passive subjects, with some of them participating only to the extent of authorizing the project, being its subjects, and receiving the results" (p. 19). In the context of the Media Hub, my PAR approach was principally meant to address a sort of powerlessness that teachers traditionally face with respect to the design of learning spaces in their schools. It was crucial to involve the people who would be using the space in order to foster a sense of empowerment or buy-in. Teachers—but also, at times, students—were active participants, rather than "passive subjects," who contributed to the research and results. In PAR, Kemmis et al. (2014) point out,

> participants are profoundly interested in their practices, in whether they understand their practices and the consequences of their practices, and in whether the conditions under which they practice are appropriate. The nature, conduct and consequences of

their practices vitally affect their self-interests, and their self-interests may affect—and even distort—their practices, the way they understand them, and the conditions under which they practice. (p 6)

This description speaks to a strength of PAR in that participants seek to better understand their practice and its influences. At the same time, the self-interest of a participant researcher, a person who is part of the organization and practice being researched, can affect or distort the research itself. In short, PAR "inevitably…is subject to observational biases" (Oxford Reference Online, 2018). I noted some of my observational biases in my data chapters.

PAR and the Media Hub project

McIntyre, Chatzopoulos, Politi, and Roz's (2007) description of PAR speaks to its epistemological approach of disseminating knowledge that is co-constructed, for it is

> an approach to working with people and exploring social phenomena that emphasizes the active participation of researchers and participants in the planning, implementation, and dissemination of research. (p. 748)

The Media Hub project brought together a participatory action research (PAR) approach with ethnographic methodology and sociomaterial perspectives, for I needed to look beyond just social phenomena to the materiality of space. I adopted a PAR approach because I wanted to empower teachers in the design and transformation of a learning space; moreover, I believed that students would have the opportunity to contribute, too, feeling a sense of empowerment and ownership, through methods such as creating concept drawings for the space that might inform decisions on materials and spatial configuration. Cohen, Manion, and Morrison (2011), for example, note that PAR "is a flexible, structurally responsive methodology that offers rigour, authenticity and voice" (p. 361). By turning to students and teachers for ideas and feedback throughout the project, I was able to include a number of voices—authentic or "indigenous" voices, to borrow McIntyre's (2007) earlier term about participant knowledge, in that most were regular users of the space. Without a PAR approach, it is likely that such voices would otherwise never have been heard in our school with respect to making significant decisions on learning space design. In this sense, I was conducting research with participants with a goal of effecting social change within the organisation, especially through the empowerment of teachers.

For the planning and implementation of the Media Hub, I collaborated most often with one colleague in particular, Craig, who was the head of the IT department and also held the

position of "Technology for Learning Coordinator." I also involved several other colleagues from the IT and English departments, as well as administration and campus facilities staff, drawing on their knowledge and feedback when needed. By creating the Media Hub, my intention was to stimulate change in our school—change, to remind, being an essential component of PAR (Pain, Whitman, & Milledge, 2011). Moreover, I had hoped to address inequalities of power (such as student-teacher relationships) in the Media Hub as a curriculum space, but also the traditional powerlessness in decision-making (Cohen et al., 2011, p. 349), specifically regarding the lack of opportunities for teachers to significantly contribute to the transformation of classrooms or learning spaces. While student agency was part of the PAR approach, the main thrust reflected teacher power—or one might say the powerlessness teachers might feel with respect to the design of classrooms (see chapter 2, pp. 66-67).

Aligned with this PAR approach, I focused on qualitative methods, which "draw the researcher into the phenomenological complexity of participants' worlds" as I aimed "to catch the dynamic nature of events, to see intentionality, to seek trends and patterns over time" (Cohen et al., 2011, p. 458). Although I was the only person actively involved in academic research for this project, some participants conducted other research, or contributed knowledge and expertise that complemented or augmented my academic research. PAR allowed for collaboration, sharing of responsibilities, and reflection after each action stage so that I could collaborate with others both to modify the Media Hub's continued development and to evaluate its role in students' experience of learning and perceptions of place. PAR, Cohen et al. (2011) argue, offers an ideal opportunity to implement change based on a team's collective desire to improve practice (p. 345), while McIntyre (2000) notes that PAR allows one to see people "as researchers, as agents of change, as constructors of knowledge in the dialectical process of action and reflection aimed at individual and collective change" (p. 149). In this understanding of PAR, various contributors to the Media Hub project could be viewed as researchers and co-constructors of knowledge, for these roles are not dependent upon conducting academic research, which itself generates only a certain kind of knowledge (and which was only *part* of what my role was as champion of the project).

PAR, according to Whyte et al. (1991/2011),

aims at creating an environment in which participants give and get valid information, make free and informed choices (including the choice to participate), and generate internal commitment to the results of their inquiry. (p. 85)

This aim is still another reminder that PAR is much more than academic research or the exchange of knowledge based on academic research, which might be driven by only one or two members of the organisation. Research can be the acquisition or exploration of knowledge through different sources and avenues, to be shared amongst a team or organization. With the Media Hub project, that meant drawing on different participants' scientific or practical empirical knowledge, or experiential knowledge, or domain knowledge (such as that of the school electrician or IT specialist), or even the tacit knowledge of administrators, for example, who knew how to support teachers in their pursuit of this project.

No precise formula or rubric prescribes a certain percentage of participation in a particular kind of research, or that absolute parity must be achieved regarding who contributes what kind of knowledge and how much of it. Still, a spacing project such as the Media Hub probably needs a champion or two to take the lead, so it would be natural that such a champion might contribute much of the academic research (but not necessarily, of course). For example, Kucks and Hughes (2019), reflecting on a participatory designing process for their sensory garden project in a primary school, recommend that similar future projects by educators should have a "visionary," one who can "Gather stakeholders and key participants along for the journey [and] [s]how them the research evidence and potential for students to flourish as a result of the project" (p. 236), which echoes my role in the Media Hub's PAR approach.

The reflective stages of PAR, and ongoing sharing of information and research, can allow for more participants to assess and critique whatever research is shared. Proposed actions might be guided or led by the project champion, but they should be distributed amongst many people (actors), as was the case with the Media Hub and its contributors: teachers, students, administrators, electricians, and other technical staff. Of course, *some* research might not be equally distributed or generated at different times, which is natural when one or two people must steer the project. Craig (my main co-collaborator), for example, would sometimes perform online research that looked at how other educators were designing and using ICT spaces in various schools, then share these ideas with just me, for it did not make sense or

was not possible to share this information all the time with all the different participants who would come in and out of the project; he would also forward articles to me from online publications related to spacing or education, which we would later discuss and reflect on, sometimes incorporating these ideas in the Media Hub by making incremental adjustments and changes. We would then ask participants and users for their feedback on such ideas or changes. One can appreciate here a rigorous application of PAR tenets in such ongoing reflection and knowledge creation, involving numerous people, with the intention to bring about change in the organisation (school), not dictated from above by administration but generated from below by teachers.

The Media Hub was meant to represent a symbolic change in how learning spaces were perceived on our campus; that is, a move away from traditional classrooms and configurations. Regarding the ongoing changes to the Media Hub—its transformation and configuration—it was necessary for me to recognize the importance of sharing our findings and ideas with stakeholders, and to prove that the research I was conducting (and leading) was valid in the eyes of some colleagues (Hammersley & Atkinson, 2007, p. 61). Early resistance from some teachers, particularly those who wished to claim ownership of the space for their department, provided interesting data on the theme of space and power; at the same time, these differences proved advantageous in that they provided valuable learning opportunities. As Whyte et al. (1991/2011) argue:

> In PAR, the researcher is constantly challenged by events and by ideas, information, and arguments posed by the project participants. If the advance of science is a learning process, clearly continuous learning is more efficient than learning concentrated primarily at the initial and final stages of a project. (p. 42)

Further evidence of the value of a PAR approach can be seen in the collaboration that occurred throughout the stages of the Media Hub's transformation, whereby we discussed, pooled skills and worked together (Pain et al., 2011) to consider how this transformed space embodied or functioned as a learning space, and what possibilities it presented for new practices and knowledge (Fenwick et al., 2011, p. 11). As part of this collaboration, we did have members who dropped in and out of participation at times, depending on the project's stage of development. These people included the sustainability coordinator, head of English, principal, campus facilities manager, head custodian, and a variety of teachers and students. Their contributions ranged from decisions about furniture and flooring to the installation of acoustic ceiling panels to suggestions for spatial configuration. Throughout this process, I

solicited feedback on the actions we took at various stages of the project. In short, the PAR approach brought others into the team when their expertise was needed (Pain et al., 2011, p. 4). Of course, a number of tensions arose surrounding decisions. Sometimes our design ideas conflicted with budgetary concerns, or practical limitations of the built environment like structural issues, or health and safety regulations. In these cases, Craig and I often had to negotiate design compromises with both the campus facilities manager and the head custodian (campus facilities).

Inspired by the Media Hub's design, or through their direct involvement with our project, a few teachers started transforming their classrooms or departmental spaces by adopting some of the ideas or approaches to learning space design embodied in the Media Hub; for example, one history teacher—a keen supporter of the initiatives in the Media Hub—emulated, in his classroom, our whiteboard wall (the pattern IDEAS WALL) and interactive projector. He had to convince our administration to support these material changes, which he argued had implications for teaching and learning. In addition, neither object was standard in classrooms on campus, so the changes would have resulted in unforeseen (unwelcome) capital budget costs. The history teacher's efforts—an act of empowerment, in a sense—show how a PAR approach can be a springboard for others to become "more thoughtful and involved users of their environment" (Woolner, 2011, p. 45).

A final point about adopting a PAR approach relates to the specific context of international schools, arguably elite institutions, spaces of privilege. Any broader goals of PAR that look to address social injustices or inequalities would appear at odds with the elitist nature of these schools and their relationship to the transnational capitalist class (TCC), a caste not looking to address social or economic inequality. Still, the value of my PAR approach can be seen— like the Media Hub itself—at the local level; that is, within the school and in relation to its own questions of differences and inequalities. As I argue in chapter 5, the increasing trend for some international schools to be concerned with iconic design reflects the agenda of the TCC (see chapter 2), not the needs and wishes of the students and teachers within these buildings. I also suggest that these design trends could result in a sameness or placelessness, which the Media Hub, through its PAR approach and focus on students' experience of learning and perceptions of place, counters. By involving these third culture kids (TCKs) in the PAR process, they had an opportunity to be engaged with, or respond to, the design and transformation of their own learning space, which could have significant value for a group of

students who are not often rooted to a local community or school. Even though these students attend international schools that are bound up in the TCC, and have parents who are very likely members of the TCC, I will argue in chapter 8 that TCKs, like one would expect of students just about anywhere, are concerned not with grand school buildings but with the everyday experiences of their learning spaces.

One final thought concerns the interesting and unique situation at our school of having a separate, and significantly smaller, francophone section that follows a French diploma programme. My PAR approach revealed that elements of their culture of teaching and learning were at odds with some of the Media Hub's design and pedagogical underpinnings, which were usually based on research literature that centred on Western (anglophone) pedagogy and culture. An extension of my PAR approach would have included a more meaningful consultation with our school's francophone section when making decisions about the design and transformation of the Media Hub. Given their minority status in the school, they represent a group that could easily be disempowered. As I discuss in chapter 6, the Media Hub's design and pedagogical underpinnings appeared to be at odds with some francophone section students' perceptions of how a learning space should be configured. In order to avoid creating learning spaces that can exclude certain groups or individuals, cultural perspectives related to pupil identity and experience of learning should be taken into consideration.

Participants

The participants for this project were students and teachers who used the Media Hub, with an additional focus on a group of colleagues involved in the space's development. When asking students to participate, I usually did so as a full-class invitation, either to my own class, or to classes of my IT colleague, Darren. I asked these classes because they represented the students who were regularly timetabled in the space. More time in the Media Hub, I presumed, meant more experiences and reflections for students to draw on. Probably because students can be reluctant to volunteer in front of others, I received only a couple volunteers after the whole-class invitation. I therefore had to individually approach some students in order to achieve gender balance, and simply to get enough participants for interviews. I approached students I knew (with whom I had a positive teacher-student relationship), or students who I guessed would be open to participating, or who frequently used the space independently. These frequent independent users of the space, I believed, would likely be

interesting informants, for they would have a unique and informed perspective on the experience of the space, including why they chose to be there independently.

During the first two years of the project, I collaborated or consulted with a wide range of participants, from Craig (the head of IT) to the school principal to students and teachers who tended to be timetabled in this curriculum space. Ultimately, a few colleagues became key participants, or informants, who could provide greater insight or particular knowledge I otherwise might not have been able to access. As Whyte et al. (1991/2011) note:

> We always encounter one or more individuals who are especially knowledgeable, insightful, and perceptive regarding the dynamics of their organization or community. We do not simply give such key informants standard interviews. It is useful to the researcher and more enjoyable to the key informant if we expand the social process to discuss with these individuals what we are trying to find out and also consult them about how to interpret what we study. Key informants thus become active participants in the research. (p. 9)

In addition to interviews, I was able to expand the social process, as the authors suggest, by having various informal discussions with five key informants: Craig (head of IT and my principal project collaborator); Carol, an English teacher and vocal opponent of the Media Hub leaving the English department's control; Mary, the head of English when the Media Hub was proposed; Darren, IT teacher and key project collaborator; and James, the new head of English after Mary's retirement in 2012. The three heads of departments, because of their position, or "social location" (Hammersley & Atkinson, 2007), brought greater insider knowledge, for they would have been privy to what some teachers in their departments thought of the Media Hub. Also, department heads tend to be involved in behind-the-scenes negotiations for the space; however, some caution is necessary with regards to a participant's social location, for information "is likely to be selected or slanted in line with his or her prevailing interests and concerns" (Hammersley & Atkinson, 2007, p. 180) as seemed the case regarding Mary's views of the English department's supposed original ownership of the Media Hub space (see chapter 6).

I tried to achieve a gender balance when selecting participants, particularly students; however, given the limited number of people who volunteered after I made broad appeals for student participants via presentations at the start of lessons (or appeals to staff in different meetings or via school communications), I had to accept whomever came forward. The focus on gender balance had particular salience early on in the project, for at that time I had

considered using the theme of gender and ICT as part of my conceptual framework. In the end, I involved twenty-five people for semi-structured interviews or discussions: fifteen students (seven females, eight males), seven teachers, the principal, and the IT director. I also conducted informal discussions with several other teachers or students, as situations arose during my field work. (My interview approach is detailed in a later section of this chapter.) The students interviewed were in the range of Years (grades) 7 – 13, with a stronger focus on Years 10 and above in order to allow for what I presumed would be a more mature response, and because our school had dedicated IT courses at this level that were timetabled in the Media Hub.

The following three tables, organised by academic year, provide an overview of interviews and discussions conducted between the principal years of my data collection, the 2012-13 and 2013-14 academic school years, and some follow-up interviews conducted during my sabbatical in 2014-15:

Date	Participant(s)	Duration	Context (Notes)
2012-13			
09.03.2013	Craig (head of IT) & Robert (maths teacher)	57 minutes	Discussion with head of IT (& collaborator on the Hub project); former head of Maths who is keen to transform space of his dept. Interview conducted in empty English classroom. Discussion centred on transformation of shared spaces in rest of building
10.04.2013	Craig	36 min.	Interview (conducted in an empty classroom)
17.04.2013	Carol (English teacher)	25 min.	Colleague in English dept.—a strong personality and vocal opponent of our "losing" the Hub space. Interview conducted in English classroom.
25.06.2013	Student 1 – Year 13 (male)	14 min.	High achieving student, new to the school, who used the Hub during my English class when we sometimes used the space—perhaps once or twice every two weeks on average. Interview conducted in cafeteria.
27.06.2013	Student 2 – Year 13 (female)	7 min.	Another student from same English class [above]. Interview conducted in cafeteria. Duration limited by our conflicting schedules & student's limited availability
26.07.2013	Mary (former head of English)	57 min.	Retired as the Media Hub came into existence. As head of dept., was not pleased to "lose" the Hub. Interview conducted at her home, on patio.

Table 1. Interview schedule 2012-13 academic year.

Date	Participant(s)	Duration	Context (Notes)
2013-14			
14.11.2013	George (IT Director)	29 min.	Responsible for foundation-wide purchase, installation of IT services; liaises with staff and administration (interview in cafeteria)
14.11.2014	Student 14 (Year 9)	6 min.	Discussion. This student also produced original sketches for proposed design changes
27.02.2014	Students 4, 5 & 6 – Year 11 females	42 min.	Three female students in my Year 11 Video & Animation class, which meets four periods/week in the Hub; the only females (five other boys), although we share the space with a Year 12 class consisting of four males and one female. Interview conducted in English classroom beside Hub.
30.04.2014	Robert (maths teacher)	20 min.	He is also the Sustainability Co-ordinator for our campus. Interview took place in lower level of Hub. Key supporter of the Media Hub and its non-traditional approach **Audio not recorded—notes only**. -Frequently mentions power structure in place at our school
01.05.2014	Student 3 (Year 12 male)	29 min.	Male student who visits the Hub on his own to do independent work; had a regularly scheduled class in the space last year with me
15.05.2014	Student 13 (Year 12 male)	23 min.	Year 12 student (male) in his second year of having a scheduled class in the Hub for a Video & Animation course (last year with me). Part of Darren's class of six Year 11 students who share the space with my smaller Year 10 class.
19.06.2014	Students 7, 8 & 15 – Year 10 male, Year 10 female, Year 12 female	38 min.	Two Year 10 students in my Video & Animation course, very keen and active filmmakers who collaborate on extra-curricular projects (films); Year 12 student who was in my V&A class last year in the Hub. -interview conducted in an empty classroom
28.10.2014	Steven (principal)	32 min.	Interview in his office
28.10. 2014	Students 10, 11, 12 (Year 10 males)	37 min.	From my Year 10 Video & Animation course -interview in the Media Hub

Table 2. Interview schedule 2013-14 academic year.

During my two-year sabbatical, I returned to the school for two observation periods, conducting the following interviews or discussions during one visit in spring 2015:

Date	Participant(s)	Duration	Context (Notes)
2014-15			
30.04.2015	Darren (IT teacher)	21 min.	An informal discussion in the IT office for 11 min. The discussion then continued for another 10 min. in the Media Hub
01.05. 2015	Dennis (history teacher)	30 min.	Discussion took place in his classroom, which has borrowed ideas from the Media Hub (Ideas Wall, interactive projector). A keen supporter of the project and its philosophy of non-traditional approaches to learning space design
01.05.2015	James (new head of English)	28 min.	Discussion (follow-up after I had earlier in the day observed one of his Year 10 English lessons -took place in Media Hub (upstairs)
01.05.2015	Student 7 (Year 10 male)	25 min.	An unstructured interview, the second with this student

Table 3. Interview schedule 2014-15 academic year.

Ethics

All research conducted under the auspices of the Moray House School of Education, at the University of Edinburgh, requires ethical approval. The application form for ethical approval, which is developed and administered by the Ethics Sub-committee and the Research Support Office, must be submitted in advance of commencing research, and in consultation with one's supervisors. The application form's "ethics guidance and categories" are organized in a four-tier system from level 0 (representing desk-based research that does not involve participants) to level 4 (research that could pose physical or emotional risk to participants). I was confident that there would be no risk of physical or emotional harm to the participants in my project, nor was I to work with atypical groups. I therefore sought, and was granted, approval for a Level 1 project which "applies to 'straightforward' non-intervention, observational research (e.g. analysis of archived data, classroom observation, use of standardised questionnaires)" (The University of Edinburgh, 2012). In addition, the ethics process requires that "Applicants must indicate their commitment to following the ethical guidelines appropriate to their research (e.g. BERA, BSA, BPS, BASES)" (The University of Edinburgh, 2012). My project adhered to BERA (British Educational Research Association) guidelines.

All students that were interviewed, recorded, or filmed had to sign, along with a parent or guardian, an informed consent form (see Appendix E). I communicated the purpose of my project through a school-wide email to staff (see Appendix D) and an online message to the wider school community early in the 2013 academic year via the campus' weekly e-bulletin. All participants' names have been represented pseudonymously in this thesis. My formal observations of teachers and their classes were open, with colleagues and students informed of my intentions in advance of each session. In cases when I made informal observations, such as dropping in the Media Hub and seeing activity or situations of particular interest to my study, colleagues and students would have been at least aware of my presence; and I always initiated a conversation with the teacher, upon entering, that referred to what was happening in the space and why it interested me. On some occasions I would have taken photographs or made observations of activity in the Media Hub when participants, or users of the space, were not immediately aware that I was doing so. I have not used any photographs as evidence that would identify students who did not sign consent forms.

Although I captured video footage for the purpose of charting student movement during two lessons in the Media Hub, I decided not to use this footage because it did not fit with the research focus, and using digital animation to transform some students' images into silhouettes for greater privacy and anonymity would have proved too time-consuming. Photographic evidence, on the other hand, was an essential source of data for my project. I took photographs with my own smartphone and sometimes a school camera, which used an SD card for storage, one that I provided for myself—the point is, any photographs that I took with the school camera did not have any images stored on the camera itself that other users might have seen or had access to. I would transfer the SD card contents to my laptop for organization and storage, just as I would do with my smartphone images. I also used my smartphone to record audio for interviews. Again, these files were transferred to my laptop for storage, and backed-up on a hard drive with a view to eventual deletion following the successful completion of my degree.

One potential ethical issue concerned how students would feel being interviewed by one of their teachers—that is, by me. As detailed in the "participants" section above, I had trouble getting students to participate in interviews. As a result, all my recorded interviews or discussions were conducted with students that I had either previously taught or that I was still teaching, for these were the only students that expressed an interest after I had explained the

project. I was therefore acutely aware of the possibility that one or more of these students could have felt some sort of obligation to participate. Before inviting students to participate in interviews, I always stressed that there was absolutely no pressure to participate. I explained this through oral instructions at the time of approach, at the start of the recorded interview session, and in writing through the informed consent form that students had to sign with their parents' approval. I also anticipated that a student might respond to questions and prompts in a manner intended to please me—the teacher—rather than provide an honest and open reflection. I therefore endeavoured, in the second year of data analysis, to interview more students that I did not teach or had not taught, but it once again proved difficult to get willing respondents.

Data collection

The majority of researchers who study learning spaces appear to adopt an ethnographic methodology, focusing on data from interviews or discussion, and classroom observation, within what tend to be small-scale, qualitative case studies of specific schools over a short period of intensive visits. Others, such as Goode, Estrella, and Margolis (2012), might return regularly to a school over some years. My data collection, primarily conducted over a few months at the end of the 2012-13 academic year and during the entire 2013-14 academic year, consisted of field notes based on informal observations in and around the Media Hub, recorded discussions and interviews with students and teachers, and class observations with accompanying field notes.

During the academic year 2013-14, the first full year of the Media Hub's transformation, I was able to make regular, often daily, informal observations of the space, for my office was located immediately outside the Media Hub. This proximity over such a long period of time enabled me "to see how events evolve over time, catching the dynamics of situations, the people, personalities, contexts, resources, roles, etc." (Cohen et al., 2011, p. 465). My descriptive field notes, hand-written and kept in small journals, followed approaches recommended by a number of researchers, as pointed to by Cohen et al. (2011): "quick, fragmentary jottings of key words; reconstructions of conversations"; descriptions of events and the physical setting of events; descriptions of behaviour and activities, including my own; and more detailed written observations (p. 466). Sometimes in lieu of detailed notes, observations later became topics for informal discussions with the IT department head (my main collaborator, to remind), primarily because of how I recognized he could influence

administration through his status (position of power) as both the Technology for Learning Coordinator and head of the IT (teaching) department.

Given the obvious and nearly universal usage of the space that I witnessed (basic computing activities such as word processing for English, or online games like "Mathletics") in these usually daily (and on many days, hourly) observations, I did not deem it necessary to make more formal classroom observations until the space was completely transformed (in June, 2014). Further data collection included three formal lesson observations for which I took detailed notes organized with columns for time, observations, and reflections or questions to be addressed after the session, an approach that "encourages the observer to think carefully about what they have observed, and to try out different observations (Open University, 2001, p. 192). Around three years elapsed between the final data collection and the submission of this thesis, which does have some implications, such as the distance I now have from the original experience of doing the ethnographic research. Also, much has changed (and some things have not) regarding the Media Hub's spatial configuration, its use, and related claims of ownership. It was also a challenge for me to ignore the ongoing, and even recent developments with the Media Hub when I was analysing the original data and then, later, when I was writing this thesis.

Interview approach

From 2012 to 2015, I conducted and recorded 12 unstructured or semi-structured interviews, as well as one unstructured discussion, with both students and teachers (see table in previous section). In each case, I strived to reach at least thirty minutes (Robson, 2002, p. 273) in order to have the best chance at drawing out enough information. As mentioned earlier, in the initial stages of my thesis I still had a focus on the theme of gender and ICT, particularly how students' gender (and gendered expectations) might influence their relationship with and perception of ICT spaces. To this end, I therefore began some early interviews with the question, How would you describe your relationship with technology? I later abandoned this question and thematic approach, because it became apparent that my research scope was too broad; I subsequently dropped this thematic focus (and the chapter I had written) on gender and ICT. Three of the student interviews were organised in groups of three, ensuring they were from the same age group, and, in two cases, all the same gender. As Robson (2002) argues, organizing groups homogenously can help to avoid power imbalances (p. 286). I was keen to have each student feel comfortable and offer her or his honest responses. As a

teacher, I was acutely aware of how age differences or gender can sometimes influence how students behave and what they are willing to share in front of others.

At the start of interviews with the majority of the students, I would ask what were basically warm-up questions about how long they had been at our school, and what other schools (in other cities or counties) they had recently attended. An additional purpose of this line of questioning was for me to get a sense of the extent to which these students could be considered third culture kids, and if such a background would have implications for my interpretation of the interviews with respect to perception of place (a facet of one of my research questions). Next, I would shift to asking them to think about, and talk about, any space(s) in their lives they could think of that represented a space full of vitality or life, perhaps one that evoked a sense of freedom. The prompt was inspired by a phenomenological approach favoured by Alexander (2002, p. 257). Here, then, is an example of the prompt that I provided to some students near the start of their group interview:

> I want you to think of a space—maybe it's another school, anywhere in your life, the past or even right now—a space, when you're there, you feel, shall we say, alive. A space that fills you with vitality, life, if that makes sense to you.

This prompt was intended to get the students thinking about space and place—that is, how they feel in a particular space, and what it is about that space (objects, spatial configuration, the built environment) that might create such a feeling.

As I anticipated, the prompt was new and foreign to them, so I usually had to repeat it. If I saw that their faces betrayed confusion, I would ask, for example, "Do you want me to repeat that?" Or sometimes I had to rephrase the prompt in different ways to ensure that the students comprehended the essence of what I was asking them to describe. Here is an example of just such an exchange:

S12:   As in "alive", what do you mean?
T: Yeah, like…
S12:   Do you really want to be there or something?
T: Yeah, that you felt that this space is, itself, it feels full of life, as opposed to a space that's kind of dead—
S10:   Mm
T: —I don't know if you've ever experienced being somewhere that feels dead and lifeless—
S12:   I don't know—
T: —where you don't want to be

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S12:    —I have a place, but it's kind of weird
T:      {That's ok}
S12:    {Like, when}[13] I'm with my grandparents—
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In this case, the student went on to discuss the positive feelings of life or aliveness that he associated with his grandparents' house, essentially expressing a sense of place and attachment to that place. In spite of how our exchange above looks, his grandparents were still very much alive, so my use of contrast (dead and lifeless space) appeared to help the student think of its opposite, a space full of life—the focus of the original prompt.

With group interviews, prompting the remaining students was smoother, easier, for a response from the first student in the group appeared to get the other students thinking about their own example of a space full of vitality or life. Because of the varying student responses, how slowly or quickly they warmed to the discussion process, and the rather foreign nature (to them) of the *essence* of what I was asking, I needed a flexible discussion approach. Follow-up questions and prompts could be tailored to each student, depending on how they reacted to or understood the prompt(s), in order to draw out further responses concerning the life of a space or how students felt in a space. I used flexible questioning to draw out their perceptions of their experience of the Media Hub because, as Pink (2007) argues, "ethnographic knowledge does not necessarily exist as observable facts" (p. 98). This line of questioning was intended to prepare them for when I later asked them to consider to what extent the Media Hub met the same criteria; therefore, after I felt that I had established in students what might be called a *sensitivity* to this concept of vitality or life of a space, I would then turn the frame of reference to the Media Hub, such as with this prompt:

> One of the things with the Media Hub is to make a space where students also feel good; well, a space that feels alive, or full of life, vitality, so I'm wondering if the Media Hub, in any way, fulfils that.

Again, I had a list of questions that I could use as a flexible discussion guide rather than strict protocol, an approach similarly used by Boman and Enmarker (2004), for example, in their studies of factors affecting middle school-aged pupils' perception of noise annoyance in Swedish schools. Here was my working list of questions:

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[13] I have adopted The Open University's (2001, p. 255) suggested interview transcription method (M.Ed. programme), which includes the use of braces (also known as curly brackets) to denote simultaneous speaking by two or more people.

How do you feel in the Media Hub?
What do you think of its name?
Do you see it as an ICT space?
How does it compare with other ICT spaces on campus?
Do you prefer certain areas of the Media Hub?
What do you like best about this space (the Media Hub)?
What do you like least?
What would you change about the Media Hub?

I transcribed the interviews only after all of them had been conducted, so the analysis of the interviews occurred after most, if not nearly all of the other data collection had been completed, a process that hindered timely follow-up with interviewees in order to clarify or draw out more detail on key ideas in their responses. This delay in transcription, which likely prevented stronger validity through triangulation, was simply a result of the overwhelming work load I was experiencing as a full-time teacher, researcher, and the project leader for the Media Hub. With a full-time teaching load, I found organizing and conducting interviews with students—which necessitated working around my teaching timetable and their own timetables—complicated and time-consuming. (One helpful solution was to organise group interviews.) I also conducted three unstructured discussion sessions with colleagues (see Tables 1 and 2) for which I created detailed notes.

Other key data sources

Although limited in terms of participant contributions, one interesting data source was a collaborative document that I created which detailed each main pattern in the Media Hub and the related, or intertwined, patterns. Organized as a chart, I added a column that detailed the intended purpose of the pattern, and a final column for feedback from colleagues in which they could share their observations of how the patterns and space were being used—that is, the effects and efficacy of the Media Hub's design patterns. I shared this document, titled *Pattern Language for a Collaborative ICT Learning Space* (see Appendix C), with six colleagues: the IT department head (my principal collaborator on the Media Hub project), three IT teachers, two of whom were regularly timetabled in the Media Hub; the new English department head, and another English teacher, both of whom were regular users of the space. I asked these colleagues to consider, and then add reflections on, the patterns and document. The maths teacher emailed me to say that he was unable to offer any meaningful reflection on the patterns, for he never used the space. Of the other colleagues, only two contributed to the

document: the English department head, and Darren, an IT teacher; however, only Darren's reflections and comments were detailed enough to be of use. As a key informant and a frequent user of the space via his timetabled lessons there, his feedback proved to be insightful, and particularly valuable for the PAR process in that it represented insider (participant) knowledge that helped inform later adjustments to the Media Hub's design and configuration.

Another crucial source of data were my field notes based on my observations of the everyday happenings and objects of the Media Hub. Detailing artefacts (objects, personal belongings, furniture and how it was re-arranged) represents a common and successful focus for data collection in educational research (Cohen et al., 2011, pp. 531-532). With my office located beside the Media Hub, and because I was timetabled to teach there, I was nearly constantly in or around the space; however, I often did not have time to make detailed notes or reflections in the moment because I had to teach a lesson or fulfil other responsibilities for my job. Instead, I would later record notes, sometimes prompted by a photograph I had taken of some aspect of the Media Hub. Overall, visual ethnographic methods became central to my documentation of the Media Hub's transformation and use.

Visual ethnography

Over the approximately two years of my principal data collection period, I took more than 200 photographs of the Media Hub's ever-changing spatial configuration, and of teachers and students using the space. (Darren also took around 20 photographs of the space for me while I was on sabbatical.) The photographs proved invaluable for capturing the various changes to the visual appearance and spatial configuration of the Media Hub through each iteration, as part of the PAR approach. Taking photographs also enabled me to document the various common or taken-for-granted material objects that constituted material assemblages in this space, objects that sometimes contributed to how space and power were contested or negotiated.

Early on, I had also planned to use some photographs to elicit student responses, thinking that I might compare images of the Media Hub with images of other IT spaces on campus. According to Pink (2007), photograph elicitation allows the ethnographer to investigate the narratives that informants create around these images, how they invest meaning in them, and how the images provide insight into how informants "produce and represent their knowledge,

self-identities, experience and emotions" (p. 82). Researcher and informant can gain new knowledge as the informant interprets the images the researcher has taken, a collaboration in understanding each other's potentially different views (p. 84). Thompson and Adams (2013) also note the digital camera's potential role in the "co-construction and revelation of a politically contentious issue" (p. 345). Such revelations could be shared and discussed with participants and informants. Through photographs,

> Via *freezing*, the research interest is arrested in its temporal tracks; the moment is focused, captured, and stilled. The subject is rendered 'objectively' available for closer scrutiny later as one of many pieces of visual data. (Thompson and Adams, 2013, p. 345, emphasis in original)

My digital camera enabled me to scrutinize many visual data points, these frozen moments throughout the design process, and I would sometime show the images to Craig or another colleague for discussion and feedback, particularly about key design elements. I also applied Pink's (2007) photograph elicitation methodology to concept drawings of various spaces in the Media Hub which were done by students, thus further widening participation in this project. These drawings represented visions of possible future design approaches or changes to the Media Hub. Some of the ideas were the students' own, others came out of informal discussions and briefings between me and the student artists. Immediately in advance of two student group interviews, I had these students collaboratively annotate photocopies of the drawings so that we could later discuss in detail their responses to the concept drawings (see chapter 7, p. 203, and chapter 8, p. 243).

Challenges to data collection

My two-year sabbatical, during which I worked abroad, brought some obvious disadvantages, but also some advantages; for example, by stepping away from the project's daily life, the space was able to develop without my guiding hand; in light of a PAR approach, responsibility then shifted to Craig and Darren in the IT department. At any rate, after approximately two academic years of intimate involvement in the project as researcher, teacher, and project coordinator, the spatial transformation was essentially complete. Because the iterative process and "dialectical interaction between data collection and data analysis" can be difficult to sustain, Hammersley and Atkinson (2007) have recognized the potential need for "lengthy withdrawals from the field in order to process and analyse the data before

returning to collect more data" (p. 159). My absence also possibly helped to counter any preconceptions and over-familiarity that can arise in a setting I knew intimately (p. 81).

During my sabbatical, I remained in touch via electronic communication with colleagues in the IT and English departments, making inquiries about the state and development of the Media Hub; however, this information tended to be superficial and I knew that physical visits would be necessary. I scheduled two visits during the 2014-15 academic year, along with follow-up interviews and discussions with a few participants while I was there, which I thought would offer triangulation in that I could compare different points in the course of my fieldwork and perhaps review, with these participants, previous statements, key quotations, or visual data (Hammersley & Atkinson, 2007, p. 183) in relation to my field notes. Returning to the space after an absence had an invigorating effect, though, and I was perhaps able to view the spatial changes with a bit of distance, rather than the over-familiarity that Hammersley and Atkinson (2007) caution against above.

Data analysis

Drawing on contemporary design guidelines and pertinent design patterns from *A Pattern Language* (Alexander et al., 1977), I started with a broad analysis of the Media Hub's built environment, although this was an ongoing action as part of the PAR approach. Alexander et al. (1977) encourage people to adapt these flexible patterns to their unique needs or situation, be it a house, office or school (p. x), so I initially considered all the patterns that could pertain to the Media Hub by reflecting on how I had included or adapted them, or how they were already extant through the inherited built environment. I also began to consider the degree to which the patterns related to contemporary approaches to learning space design, as well as sociomaterial perspectives on space. I narrowed in on the following key patterns:

> ALCOVES; SMALL WORK GROUPS; LIGHT ON TWO SIDES OF EVERY ROOM; WINDOW PLACE; WINDOWS OVERLOOKING LIFE; SITTING CIRCLE; SEAT SPOTS; DIFFERENT CHAIRS; POOLS OF LIGHT; WARM COLORS; WELCOMING ENTRANCE (see Appendix A for example diagrams or definitions)

Later, in chapter 7, I discuss how the patterns were interwoven, and how some patterns, such as PODS and CORNER SPOTS, my iteration of Alexander et al.'s (1977) ALCOVES, had particular value for the spatial configuration of the Media Hub, and implications for both the experience of learning and the negotiation of power. For now, to provide some context and broad understanding, here are brief excerpts from Alexander et al.'s (1977) *A Pattern*

Language to show the essence of two patterns, SMALL WORK GROUPS and WINDOW PLACE.

First, SMALL WORK GROUPS:

> **When more than half a dozen people work in the same place, it is essential that they not be forced to work in one huge undifferentiated space, but that instead, they can divide their workspace up, and so form smaller groups…Arrange these work groups so that each person is in at least partial view of the other members of his own group**. (Alexander et al., 1977, p. 702, bold in original)
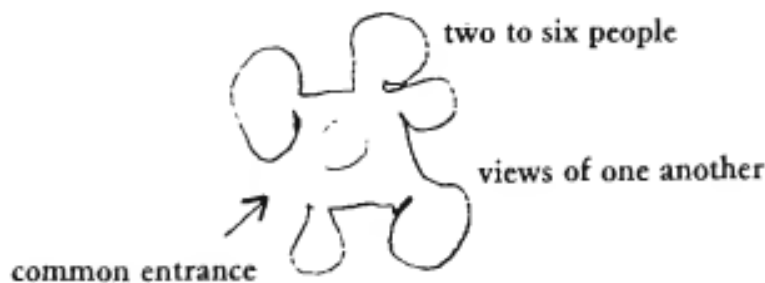
Figure 8. SMALL WORK GROUPS (Alexander et al., 1977, p. 704)

The pattern SMALL WORK GROUPS would inform much of the layout of the Media Hub, for it aligned with our philosophy of encouraging collaborative work. This pattern intertwined with the PODS (chapter 8) configuration upstairs, the CORNER SPOTS (chapter 7) on both floors, and was evident in the round tables on the lower floor (see Figure 78). Second, Alexander et al.'s (1977) pattern WINDOW PLACE (see also Appendix A), which underpinned the two CORNER SPOTS upstairs by the windows (see pp. 195, 201) and the lower-floor CORNER SPOT (see p. 243):

In every room where you spend any length of time during the day, make at least one window into a "window place."
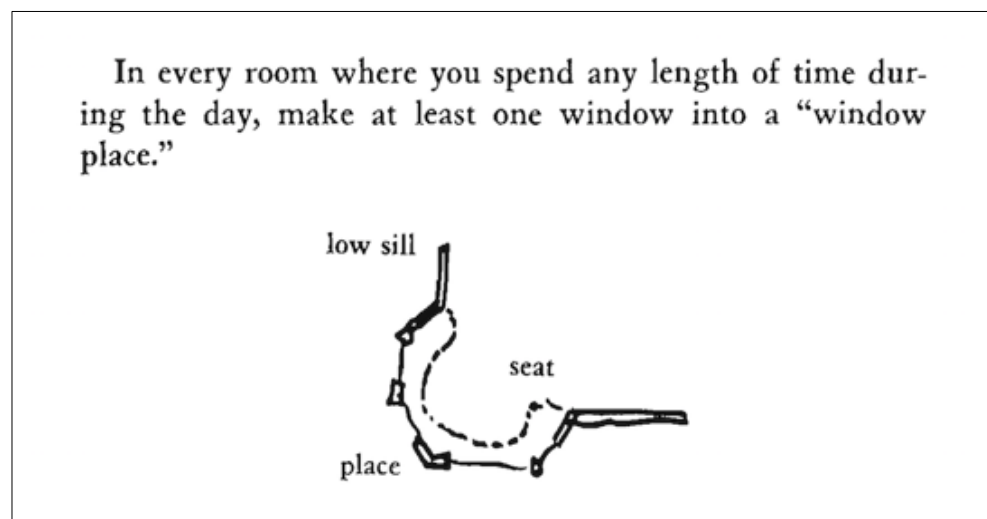
Figure 9. WINDOW PLACE instruction. (Alexander et al., 1977, p. 837)

Additional and ongoing data analysis—as it emerged from interviews, classroom observations, and field notes—considered how these patterns related to how people negotiated power, to students' experience of learning (ultimately as it related to negotiating power), and to students' perceptions of place. I later created a document to review and reflect on the extant patterns in the Media Hub and the new ones we had created. I shared this document with several colleagues who were either part of the project or who used the space frequently, soliciting their feedback on the efficacy and effects of the patterns (see Appendix C, *Media Hub Pattern Language*). Some additional patterns that emerged or that I created, and that contributed to the overall pattern language of the space included:

> CAMPFIRE GATHERING (an iteration of SITTING CIRCLE); IDEAS WALL; STANDING MEETING CORNER (an iteration of WINDOW PLACE); VIEW OF NATURE; WELCOMING ENTRANCE (an iteration of ENTRANCE TRANSITION); FILM STUDIO; COMFORTABLE SEATING; CARPET

While the interwoven nature of patterns is meant to strengthen each pattern and the language overall, a sociomaterial reading of the space revealed how the patterns were bound up in the contestation of space and negotiation of power in unexpected ways (chapter 7); also, the actual use of the space was sometimes at odds with the intended design of the space or patterns (see p. 186).

Detailed analysis of my field notes, classroom observations, and interviews started later than I had anticipated because of a few reasons: the project coordination demanded much of my free time at work, which meant I had to focus solely on data collection in the early stages of the project; my teaching load was at one-hundred per cent; and, early on, I was simultaneously conducting the literature review. Once the Media Hub's design was mostly completed, I was then able to "painstakingly take apart [my] field notes, matching, contrasting, aggregating, comparing and ordering notes made" (Cohen et al., 2007, p. 462). Regarding the interview transcripts, I started by highlighting phrases and sentences that revealed students' responses to their experience of learning and perceptions of place. I also copied out these selected key responses, placing them as a list below the transcribed interview for quick reference later. These lists or fragments helped me begin to see potential categories and themes emerging.

To better manage and make sense of the data, particularly the interviews, I then turned to the data management software program NVivo. Using this programme, I was able to code and

categorize the data with greater ease. Reflecting upon my approach to data organization now, I can see that I had trouble starting the process because the data were very difficult to make sense of when they were just in folders and files on my laptop computer. In other words, I should have used NVivo from the outset, which perhaps could have enabled me to reflect more on the interviews, or conduct prompt follow-up conversations with interviewees while I was still collecting further data. Through the NVivo software programme, I developed analytic categories as I progressively focused my research (Hammersley & Atkinson, 2007, p. 160; Parlett & Hamilton, 1976, as cited in Cohen et al., 2007, p. 462). Emergent categories or themes based on interviews and field notes included: freedom of movement, spaciousness, comfort, student-teacher relations, power struggles for curriculum space, and my supposed betrayal of the English department. With these themes of betrayal and control of space emerging through initial data analysis, I began to re-focus on the negotiation of power in the early stages of the space's development, comparing the initial competition for, and attempted control of, the Media Hub with how it might be controlled by certain teachers or departments as the space evolved over time.

One of the most significant spatial changes was probably the introduction of a non-traditional seating arrangement that replaced low desks, originally arranged along the room's perimeter walls, with pods of standing desks; moreover, introducing material changes (such as the Media Hub's high tables, stools, cube cushions and comfortable chairs) can challenge, constrain or support certain teacher practices (Bissell, 2004, p. 29). The shared *Pattern Language for a Collaborative ICT Learning Space* document, mentioned above (Appendix C), was meant to draw on key actors' (or informants') impressions of the effects of the patterns and their ongoing adjustment. I would then be able to compare these reflections with visual ethnographic data, and with student feedback gathered from interviews; however, as I mentioned above, only two colleagues contributed feedback to this document. Crucially, and rather unfortunately, the head of IT, who was often my primary collaborator in the Media Hub project, did not add his reflections to this document despite my several requests. Still, this document was just one of a few data points that I considered as I tried to compare perceptions about student movement, what control they had over where and when they move, what zones, if any, tended to lead to contestations of space, and how the pattern language approach looked in practice.

During my sabbatical visits to the Media Hub, user actions that I analysed through observation, and later discussed with some participants during follow-up interviews, focused primarily on student movement and behaviour, and teacher-student interaction during a lesson. I looked for routine practices and activities or rituals, as Hammersley and Atkinson (2007) have suggested, that demonstrated the "performative" nature and life of social actors (p. 169). One example concerns how teachers used the area at the "front" of the classroom, represented by a whiteboard-teacher desk-computer assemblage. In chapter 7, for example, I analyse the case of a teacher who carried in a desk from another classroom, placing it just inside the entrance, to use as a teacher desk. A sociomaterial reading goes beyond Hammersley and Atkinson's (2007) point above, recognizing that the table—a taken-for-granted material object—is bound up in a social actor's performative nature and life. Indeed, the table had implications for the negotiation of power and space (see p. 206).

Quantitative data

Although I decided to focus on qualitative ethnographic data for this research project, I wanted to incorporate a few quantitative data points relating to acoustics as well as actors' usage of the space, including frequency. Early on in the Media Hub's development, I recognized through my own experience and through feedback from colleagues that the space was quite noisy and reverberant, as was the foyer onto which the Media Hub opened (a foyer shared with five English department classrooms). Using a decibel (dB) reader borrowed from our science department, I recorded the dB levels in the foyer, in the Media Hub, and a nearby classroom for comparison (particularly during active moments during a lesson), over a few days. In the Media Hub or neighbouring classroom, these moments were when students were working independently and collaboratively, rather than when the teacher was giving instruction; in the foyer, the active moments were during the five-minute breaks between lessons when up to several dozen students would congregate. This cursory investigation of dB levels suggested that noise levels were often above recommended industry or education standards, which I hypothesized was largely because of the built environment, in particular the concrete walls and ceiling, and the lack of sound-absorbing tiles or materials anywhere.

After sharing with our administration my concern about potential noise annoyance, the campus facilities manager arranged for professional acoustic readings; unfortunately, the data from this study were never shared with me, or any teachers, in spite of my several oral and written requests. Still, my concerns and this professional investigation did later result in the

addition of sound-absorbing acoustic panels being installed on the (exposed) concrete ceiling in both the Media Hub and bordering foyer. My concerns about the reverberant nature of the Media Hub also led to further improvements in the space's acoustics through the addition of two sound-absorbing curtains, one around the central stairwell on the lower floor, the other sectioning off the back alcove (film studio) of the lower floor. With salience for the projects' PAR approach, these changes were initiated and overseen by two of my IT colleagues while I was on sabbatical. Such acoustical changes could have had implications for students' experience of learning or perceptions of place, particularly as relates to perceptions of "peace and quiet," a data theme that I examine in chapter 8; however, because my principal data collection had ended by the end of the 2014-15 academic year and I was on sabbatical, I was unable to follow up, in depth, on the perceived effects of these acoustical changes. At any rate, isolating the effects of such changes from other factors in the built environment, and from the sociomaterial nature of the space, would have posed considerable challenges to data validity and to me as a researcher on sabbatical abroad.

I also kept a record of teachers' class bookings (not timetabled) in the Media Hub from September 2013 to December 2015, near the end of my data collection period. These online bookings, made through our school's software platform, provided teachers' names, their department, and the grade levels and classes for which they reserved the space. I used these figures to see which teachers, from which departments, were the most frequent non-timetabled users of the space. The data was intended to provide a bridge to related qualitative data, such as my discussions with teachers about why they booked the Media Hub, and how (for what purpose) they used it. My analysis also looked to how certain teachers, as representatives of a few key departments, claimed space simply through being in the space (booking it), and then how their *use* of the space—their pedagogical approach—was interpreted by other teachers. Drawing on sociomaterial perspectives, I analyse in detail such contestation of space and negotiation of power later in chapter 6, but first I will look at the wider context of space and power as it relates to iconic architecture and the transnational capitalist class, the focus of the next chapter.

Chapter 5: International Schools and Iconic Architecture

Introduction

In my literature review, I examined how international schools can be viewed as an industry, representing spaces of privilege that can serve to reflect the prestige and power of the transnational capitalist class (TCC). I drew on Sklair's (2005, 2010) argument that an increasingly crucial way of promoting the TCC's power is through architecture, specifically the iconicity of a building, which can be achieved at the local or global level. I applied and extended Sklair's argument to ambitious and grand school building transformation projects. As I will analyse in this chapter, such projects might be funded directly or indirectly by corporations with ties to these schools, and then promoted and branded through media publications, on the Internet, and even in public spaces. Decisions to fund these projects would be made at the international school's governing board level, so I will first discuss the composition of the governing boards of three international schools in Switzerland in order to show how such schools have ties to the *corporate fraction* of the transnational capitalist class (TCC). After, I will examine in detail the corporate funding—TCC ties—behind a recent major building project, the new campus of Copenhagen International School.

I will then turn to a visual analysis of international school design and architecture, making the argument that these schools, as part of the TCC, can be understood as consumer spaces. As such, they sell a product: international education. Through iconicity and branding, the product is also an exclusive or privileged *space*, one that reflects the prestige and power of the TCC. In the end, the product—an assemblage, really—includes the building's iconicity and the power and status it symbolises. The intertwining of the various *fractions* of the TCC can be seen in the promotion of some international schools, from opening ceremonies to local media publications, which shows how space and social actors assemble with the material in order to reaffirm the TCC's global power rather than contribute to social justice and the promotion of education at the local level.

Rather than beginning with an analysis of the Media Hub itself, as the reader might have expected, I shall use this chapter to provide a macro analysis of international school spaces and power, a reminder that issues of power echo at all levels of international education, from the global to the local, like nested Russian dolls. This chapter on the relationship between the

TCC and international schools therefore contextualizes the smaller, local space of the Media Hub by situating it in larger transnational spaces of privilege: international schools. Smaller spaces like the Media Hub achieve value through contrast: local places as a counterpoint to globalizing spaces. The chapter also serves to remind that a classroom in an international school—itself an assemblage that includes people and everyday objects of education—is still part of the wider assemblage of international schools, the international education industry, and the TCC, all of which can be bound up in iconicity and issues of power and privilege. In short, globalizing spaces. Again, this chapter's sociomaterial examination of the wider assemblages of international education will provide an important contrast with the smaller spaces and places of education, like the Media Hub, that matter most to students and teachers, an argument I expand on in chapters 7 and 8. By first presenting and interrogating the TCC-iconicity-international school assemblage, by highlighting the power and privilege that appears to stabilize—at least temporarily—this assemblage, the Media Hub project will emerge as an important counterpoint: a space of education concerned with the local, not the global; with empowerment, not the display of power and prestige.

Governance of international schools

To better understand the possible links between international schools and the various fractions of the transnational capitalist class (TCC), it is necessary to first examine the governance of some of these schools, perhaps even discern a pattern. School governance, I will show, can be part of the wider assemblage of transnational spaces of privilege, so in this sense the governance model and those who govern—often representatives of the TCC—contribute to the ongoing creation of a particular kind of space of privilege and exclusion. International school governance usually falls under two categories: for-profit or not-for-profit. I will focus on not-for-profit schools, which at least removes an obvious layer of a capitalist or consumerist model. A closer look at three not-for-profit schools in Switzerland will reveal how an international school can draw upon its ties with the TCC, particularly transnational corporations—Sklair's (2016) *corporate fraction*, which I discussed in chapter 2—to fund the construction of large-"T" Transformation or iconic building projects.

To remind, Sklair (2016) conceptualises the TCC as "the characteristic institutional form of transnational practices in the global capitalist system" (p. 331), representing "a global power elite, ruling class or inner circle" that, as a social class, is divided into four fractions:

consumerist, technical, political, and corporate (p. 332). With what appears to have implications for the governance of international schools, Sklair (2016) argues:

> The four fractions of the TCC in any geographical and social area, region, country, city, society, community, perform complementary functions to integrate the whole. The achievement of these goals is facilitated by the activities of local and national agents and organizations which are connected in a complex network of global interlocks. (p. 332)

This network and its local agents are evident, arguably, in the governance of some international schools in Switzerland, a country worth examining because of its signification relationship with international organisations, and its long history of private and international education. Despite its relatively small size, Switzerland is home to 48 international schools, who are members of the Swiss Group of International Schools (SGIS, 2020, *Member schools* page). By comparison, in neighbouring Germany, which has a population nearly ten times that of Switzerland, there are only 23 schools that comprise the Association of German International Schools (AGIS, 2020, *Our Schools* page).

In 2016, the governing board of the not-for-profit International School Lausanne (ISL, 2016) was comprised of 11 members, although it can be comprised of eight to twelve members, according to its website. Other than two members who reported to be unemployed at the time, the rest reported jobs with (transnational) corporations like Nestlé (headquartered in nearby Vevey), TetraPak, Philip Morris International (its international headquarters is located in Lausanne), and Ferring Pharmaceuticals. The school's website (ISL, 2016) also states that "the Board is composed of members who are representative of the community, who have shown commitment to the school and/or who possess skills that are critical to the Board" (*Governance* page). Other notable transnational corporations in the region, whose employees would likely send their children to this or a neighbouring international school, include the second largest global tobacco company (Burnand, 2018), British American Tobacco (BAT), as well as coffee giant Nespresso. The governing board therefore draws on members of the (parent) community who would predominantly work for or have significant ties to the TCC's corporate fraction. All twelve members of the 2018 governing board had a child attending or who had attended the school (ISL, 2019).

Shifting focus northwest in Switzerland, the city of Basel is known for its connection with *Big Pharma*, hosting the headquarters of Hoffman-La Roche, Novartis, and Syngenta.

International School Basel (ISB), my second example, in 2019, had nine board members (numbers can range from 7 to 12), four of whom currently represent, respectively, Novartis, Hoffmann-la Roche, Syngenta, and the Bank of International Settlements. In addition to including the school's director, the governing board also includes members who represent the school's own *association*. The school operates based on three types of registered shares, A, B and C, and "Each registered A and B share carries with it the right to one place in the School subject to the general admissions policy. Each share carries one vote at shareholder meetings" (*Shareholders* page, ISB, 2019). Some of the 21 "A" shareholders for ISB include: pharmaceutical and chemical companies Bayer, Novartis, Hoffmann-La Roche, and Syngenta; as well as other familiar corporations like IKEA, PricewaterhouseCoopers, UBS, Colgate-Palmolive, and BASF (*Governance* page, ISB, 2019), the world's largest chemical company.

Eastwards, for my third example, is Zurich International School (ZIS). The employment profile of its governing board reflects the major industry in the region—banking (just as Nestlé and Phillip Morris are associated with Lausanne, and pharmaceuticals with the Basel region). In 2016, Zurich International School had sixteen board members (ZIS, 2016, *Governance—Board of Trustees* section). Their website also revealed that 7 of the board's 16 members worked or have worked in banking (investment, capital management). The rest of the board's background included two in charitable organizations, and the others representing fields such as management consultancy, public relations, and marketing. What one sees with these three international schools, each in one of Switzerland's larger cities, is a governing board or governance structure that tends to reflect the wider parent body of international schools; that is, those who, because of their employment with a transnational corporation or organisation, could be considered a member of the TCC. International schools can also draw on these corporate or TCC ties to help fund school construction and large-"T" Transformation projects, for international schools are unable to draw on public funding like a state school could.

It seems unlikely that a large-scale building project (costing millions of euros or Swiss francs) would be possible without assistance from the TCC in some way, a reflection of the TCC's intimate ties with, and perhaps power over, many international schools:

The first thing to recognize is that there is a huge variety of international schools

serving different clienteles and managed with differing aims in mind. The second is to recognize that, as with most schools, individual international schools may serve several masters. (Bates, 2012, p. 271)

Even indirectly, those masters can include transnational corporations or other members of the TCC, which is also suggested by the funding support for another recent iconic building project that I will now examine in detail, the new campus at Copenhagen International School. I will also look at Oryx International School in Qatar, a school with exceptionally close—and not-so-subtle—corporate ties. The purpose of this detailed analysis is to show how a building's iconicity can elevate a school's status in its region (or beyond), further projecting and reaffirming the global power and prestige of the TCC; moreover, a building's iconicity is also a visual reminder of the exclusive and privileged space of education within.

Funding of major building projects

Iconicity plays a central role in promoting the culture-ideology of consumerism in the interests of capitalist globalization, namely the transnational capitalist class (Sklair, 2010, pp. 136-137).

This section will examine how this transnational capitalist class' (TCC) culture-ideology of consumerism can even extend to international schools and the education on offer within. Given their governance structure and inability to draw on state funds, it is unsurprising that international schools must turn to, directly or indirectly, transnational corporations (employers of parents who send their children to these schools) to help fund construction of large-scale—iconic—building projects. To provide a detailed example, I turn to Copenhagen International School. On its website (CIS, 2017), the school announced its donors (or business partners) for the new campus project (*New building project* page) as it neared completion in 2017:
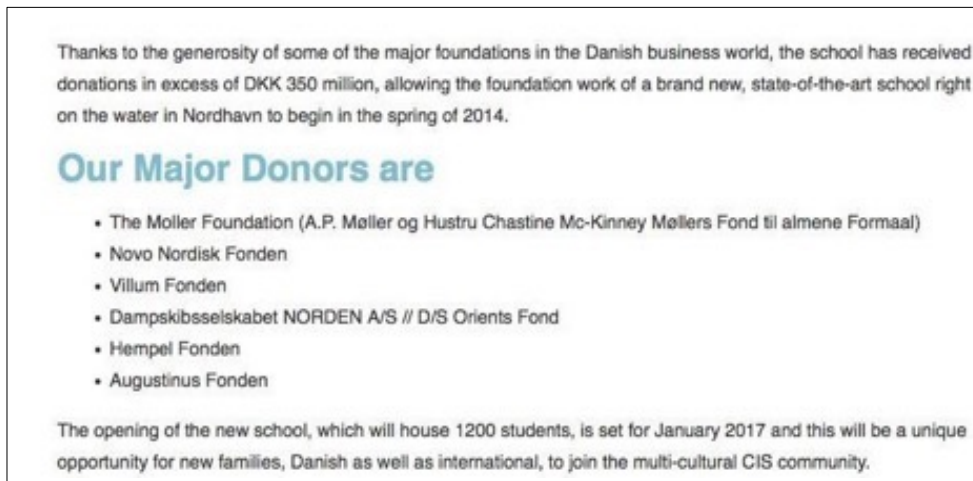
Figure 10. List of CIS' major donors: screenshot from the "New building project" page (CIS, 2017)

The Møller Foundation is a branch of the Maersk shipping company, one of the largest multinational corporations in the world. Novo Nordisk, second on the list, is a multinational pharmaceutical corporation, or "global healthcare company," according to its own website (Novo Nordisk, 2018). With its headquarters in Denmark, "Novo Nordisk employs approximately 43,100 people in 79 countries and markets its products in more than 170 countries" (*Who we are* section). Next, Villum Fonden is part of The Velux Foundations, a philanthropic arm of the Velux window company (itself part of the larger multinational VKR Group). Here is how Villum Fonden—one of the major donors to the new building for Copenhagen International School—explains its philanthropic structure:

> VILLUM FONDEN is a majority shareholder in the VKR Group.
>
> The foundations are philanthropic even though VILLUM FONDEN is the principal shareholder of VKR Holding, the parent company of the VKR Group, which has more than 15,000 employees and comprises a number of companies, among which VELUX, VELFAC and Rationel Vinduer are the most well-known. (Villum Fonden, 2018, *The Foundations* page)

VKR Holding is a holding and investment company. The website goes on to say how, through its grants, the Villum Foundation "supports scientific, cultural, social and environmental purposes" and that "All grant areas share the purpose of promoting the democratic society of Denmark on an informed, inclusive and sustainable basis" (*The Foundations* page). Of course, one might question how democratic and inclusive it is to fund a private school whose fees make the school available only to wealthy locals or members of the TCC.

Next, Hempel Fonden, according to its website, is a "commercial foundation" which is

> the sole shareholder of the Hempel Group—a world-leading supplier of coatings for man-made structures—and a committed philanthropist within the fields of education, sustainable coatings technology. (Hempel Fonden, 2018)

The website also reveals that the foundation is the owner of Hempel Group, which "consists of 6,000 people from 80 countries around the world" (*What we do* page). Another donor to the construction of the CIS campus was the Augustinus Fonden. According to Wikipedia ("Augustinus Fonden," n.d.), the foundation has stakes or holdings in companies such as the Scandinavian Tobacco Group, Fritz Hansen (furniture), Tivoli A/S (Tivoli amusement park in Copenhagen), a newspaper, wellness spa, and Royal Unibrew, a brewing company. Of course, the point is that multinational corporations (Sklair's *corporate fraction*), even indirectly, are bound up in an assemblage that includes international school spaces (via iconic architecture) and international education; it is an assemblage that perpetuates a particular social order and the privileging of this international, globally mobile class, the TCC.

The final key funding donor for the new CIS campus, Dampskibsselskabet NORDEN A/S, is a global shipping company that operates in dry cargo and tanker vessels. According to their website, (Dampskibsselskabet NORDEN A/S, 2018), 230 employees work at their head office in Hellurup, Copenhagen (the same area as the previous and original campus of Copenhagen International School). The company also has 322 employees scattered across their offices in Singapore, Shanghai, Annapolis (USA), Rio de Janeiro, Mumbai, Santiago, Vancouver, and Melbourne, with another 690 people employed on company vessels (*NORDEN in brief* section). Overall, each of these major donors can be considered a transnational corporation, or at least the philanthropic branch of such a corporation. While these donations might fall under the category of philanthropy, the purpose and result are not philanthropic in terms of social justice, for the funding is going towards the construction of exclusive spaces of education that serve members of the TCC. Sometimes the corporate funding is rather more direct and exclusive.

Towards the extreme end of corporate involvement with international schools would certainly be the Oryx International School, in Barwa City, Doha (Qatar), which provides a striking example of a very particular kind of assemblage that perpetuates privilege and exclusivity through education in private international schools. The school is part of the British education

company Orbital Education Ltd., also known as Orbitaled. Founded in 2005, Orbitaled offers the British National Curriculum across its ten schools on three continents (Orbitaled, 2018). Oryx International School's website offers this summary:

> Owned by Qatar Airways and managed by Orbital Education, [Oryx International School] is uniquely for the children of employees of Qatar Airways and its approved Subsidiaries. (Oryx School, 2018a).

Construction of its new campus, depicted in the image below, began in 2017:

Figure 11. Artist's rendition of Oryx International School's new campus. From "Oryx International School New Campus," by Oryx School, 2018b (https://oryxschool.qa/news/2018/oryx-major-developments-1-).

A reminder of its corporate ties, the school is apparently "conveniently located for Qatar Airways employees just a few minutes from Tower 1 and adjacent to Tower 11" (Orbitaled, 2018). One of the school's foyers could easily be confused for an exclusive airport lounge:

Figure 12. A foyer in Oryx International School. From "Oryx International School New Campus," by Oryx School, 2018b (https://oryxschool.qa/news/2018/oryx-major-developments-1-).

This corporate partnership appears much further along the continuum than having, say, technology design input from Apple, which was the case at the new campus of the British International School of Houston (Nord Anglia, 2018, *School Amenities* section); or the more familiar, almost traditional, corporate relationship that exists through an exclusive sponsorship deal with corporations like Coke or Pepsi or Adidas, which has not been uncommon in the past decades in some North American schools. Such corporate sponsorship can help fund building projects like a new stadium—on which the name of the corporate sponsor will appear, of course (Lohman, 2003). A stadium can approach or achieve iconicity in a local context, providing brand recognition and prestige for these multinational corporations, but with the added veneer of altruism that an association with a school can offer.

The Oryx International School is an example of how far international schools can now stray from their original ideological purpose and values (as discussed in chapter 2), such as inclusiveness, the "ideological promotion of international peace and understanding" (Hayden, 2011, p. 221) or the need to "nurture the global citizen" (Doherty, 2012, p. 316). Rather than address social justice in the local region by providing accessible education, international schools are more likely to perpetuate privilege, and the prestige of the TCC, through their exclusive spaces of education that are made all the more exclusive through iconicity. The Qatar Airlines relationship with the Oryx School is merely a more direct or overt sponsorship—still part of an assemblage—compared with the example that began this section, Copenhagen International School's TCC funding for its new iconic building.

Visual analysis of international schools

> A building is an organizational device, which means it is a communication device. (Brand, 1994, p. 165)

Located on the waterfront in a former industrial zone now being redeveloped for residential life, and with three towers reaching nearly seven stories, the new campus for Copenhagen International School (CIS), in Denmark, is a building one could not help but notice if nearby or even at a considerable distance. Drawing on Attoe (1981), Sklair (2005) notes that "Recognition of the outline of a building or a skyline is one of the great signifiers of iconicity" (p. 496). On its homepage, Copenhagen International School (CIS) had the

following design image of its, at the time (2016), soon-to-be-completed new campus in the Nordhavn district of Copenhagen:

Figure 13. Artist's rendition of CIS' new campus. Screenshot from "The new campus*"* section, by CIS, 2016 (http://www.cis.dk).

To help promote or emphasize a building's supposed iconicity, architectural firms' websites "are all richly illustrated with pictures, often artists' impressions and/or computer-generated images of as yet unbuilt buildings" (Sklair & Struna, 2013, p. 759). This practice is picked up by CIS, for example, which uses the artist's rendition of the school on the homepage of its website, making the building the main selling point or attraction rather than the kind or quality of education on offer within. While the tactic of featuring impressive architectural features of a campus is likely not a new approach for many larger and older universities, it appears to be a new tactic for international schools, and all the more surprising because they are comparatively such small institutions, with populations rarely exceeding 1500 students.

Underscoring the apparent iconicity of this project, and its significance to the redevelopment of Copenhagen's Nordhavn harbour area, the new building's cornerstone event, in June 2015, was opened by the Copenhagen's mayor, who represents Sklair's (2016) *state fraction* of the TCC. A striking feature of the building is that it was to be entirely covered in "15 000 solar panels," the image's caption (Figure 13) highlights, a fact that was repeated in numerous other online press releases and articles in local papers, some of which are detailed below. Such a striking or unique architectural element, like the soaring roof over Wembley stadium, Sklair and Gherardi (2012) argue, can provide a building with iconicity (p. 61), which the media, the *consumerist fraction* of the TCC, will promote. In an online news article from *CPH Post*, the chairman of the property fund behind the school's construction is quoted from

his speech at the event: "The school is in itself so unique and attractive that we hope to inspire other educational institutions both in Denmark and abroad" (Kyca, 2015). His remarks about uniqueness and inspiring others suggest iconicity, but so too does the article's title, which claims that the school will be the "pride of the city," thus implying unparalleled fame.

Another local English-language news article (Millan, 2015) reports (after mentioning the name of the architects, of course) that the school, upon completion, "will be not only the centerpiece of Nordhavn but [also] one of the largest building-integrated solar power plants in Denmark," a point identically reported in an online article in *World Architecture News* (Myall, 2015). The eco-friendly design—which includes its aesthetic significance—marks the school as iconic, even quasi-futuristic in its use of the latest sustainable technologies that would be too costly for almost any school. In addition to the building becoming "the city's largest school," its special status and symbolic function as the "centerpiece" (Millan, 2015) of this newly redeveloped waterfront area establishes its local and even national iconicity. Global iconicity could follow, for the school's architects had entered the school in international architectural competitions. These examples show how the media—Sklair's (2016) *consumerist fraction*—can highlight or promote the TCC's power or status as symbolized by a building's iconicity.

Millan's (2015) English-language news article on CIS' new campus also shows how another TCC fraction, the *state fraction*, can be involved in promoting the iconicity of a building. At the building's cornerstone event, the mayor of Copenhagen is quoted as saying that

> Copenhagen International School will undoubtedly help to attract highly educated foreign experts and business leaders to Copenhagen, because we can now offer a strong international community with a clear, sustainable profile in and around [the school].

The implication here is that the building itself—because of its iconicity achieved through design, appearance, and eco-friendliness, rather than the teaching and learning within its walls—will attract these "foreign experts and business leaders," who one can understand to be members of the TCC. A similar claim was made about a new forty-million-dollar (US) campus for the International School in Kenya in *The International Educator Online,* "the marketplace publication for international education," its motto states. The article's writer—who, in an example of how Sklair's TCC fractions interweave, turns out to be the Community Relations and Alumni Director at the school—claims that, in addition to Nairobi's draw for

NGOs, the school itself "is one of the reasons that people want to relocate to Nairobi!" (Pappas, 2014). The hyperbolic claim is accompanied by a photograph of the school, with a caption describing the campus' learning commons as "iconic." The writer's claims call to mind Sklair and Gherardi's (2012) argument that "The main clients in the architectural market of iconicity are corporations and cities themselves" (p. 64). The cities and corporations can then use the iconic buildings to attract or relocate members of the TCC.

Sometimes a school's iconicity is promoted through a speciality building rather than the main education building; for example, Institut Le Rosey, a private international boarding school in Rolle, Switzerland, built an ultra-modern 1000-seat professional concert hall in 2014:

Figure 14. Image of Rosey Concert Hall. From "Rosey Concert Hall," by Le Rosey, 2016 (http://www.roseyconcerthall.ch/about-us/paul-henricarnal-hall/mission/).

Its website announced that the Rosey Concert Hall, inaugurated by a performance from the Royal Philharmonic Orchestra, would "host some of the world's most prestigious orchestras," including the St. Petersburg Philharmonic (*Mission* section). It is difficult to imagine that a local school—anywhere—could ever draw or host such prestigious performers, let alone accommodate *any* full orchestra. Sklair (2010) argues:

> In architecture, as in other quasi-cultural fields, endowing the commodity with iconicity is simply a special and added quality that enhances the exchange (money) value of the icon and all that is associated with it. (p. 141)

In this light, the iconic building could enhance the value of the education on offer at the school. With school fees at $113, 000 US in 2012 (Kassel, 2012), only the mega-rich can afford to send their children to Le Rosey, and the sight of the iconic concert hall just might

remind others of that fact; its exclusivity is further emphasized by the school's claim that the concert hall's promise of "educational innovation" represents "Rosey['s] exceptionalism" (Le Rosey, 2016, *Mission* section).

In addition to achieving iconicity through a building's architectural appearance, the profile or status of the architects themselves can contribute to iconicity. The Rosey Concert Hall was designed by New York- and Paris-based architect Bernard Tschumi, with the concert hall's website dedicating a page to noting Tschumi's success and fame. A building famous for its architect can contribute to its iconic status (Sklair, 2005; Sklair & Gherardi, 2012). The Tschumi firm, via its own website, emphasizes its own status and value through its global (transnational, one might say) reach. Similarly, the articles on the Copenhagen International School's new building, discussed earlier, also mention the building's architects, C.F. Møller, which, according to the firm's website, is "one of Scandinavia's oldest and largest architectural practices," with 350 employees and additional branches in Oslo, Stockholm, and London. This kind of international profile and the firm's status contribute to the iconicity of the school building, so high-profile firms and *starchitects* become just another part of a wider assemblage that reflects the global power and prestige of the TCC. The local region is subservient to this assemblage and what the buildings communicate—that they are exclusive spaces (of education).

Iconicity is powerfully projected through a building's architectural appearance, and enhanced by drawing attention to the notable architectural firm behind it; however, because iconicity can also be projected through the media (the *consumerist* fraction of the TCC), a building need not always be prominent in a skyline or fully visible to the passing public in order to achieve iconicity. What comes to mind is Massey's (2005/2014) critique of what she describes as a science park of knowledge production, which tends to be

> *an enclosed and separate space; a landscaped environment within, to give off some evocation of 'quality'[...] and a picturing of the wider environmentally attractive area within which it is set.* (p. 143, italics in original)

The following image, of just such an enclosed and landscaped environment, can be found on the homepage of The International School of the Hague (2016), whose school campus appears immaculately manicured, like a private golf course, and is nestled in a remote woodland area "with the ocean only a few minutes away":

Figure 15. Overhead view of International School of the Hague. Screengrab from "An Oasis for Learning," by ISH, 2016 (https://www.ishthehague.nl)

The caption claims that this enclave is "An Oasis for Learning," a metaphor suggesting a haven, perhaps even providing an implied contrast with some unpleasantness or strife beyond the school's property. Rather than having a spectacular architectural appearance, the school could achieve iconicity through this special symbolic or aesthetic significance of seclusion in a natural setting that offers the promise of an enclave or refuge. Although Massey (2005/2014) argues that "Neither space nor place can provide a haven from the world" (p. 195), the exclusive spaces of international schools do appear to be set apart from at least their local communities.

The iconicity of the International School of the Hague is different from that of Copenhagen International School (CIS) in that it is not visible in the skyline; however, like CIS, it partially achieves iconicity online, through digital spaces showing idealised photographs such as the one above. Here, iconicity emerges through an assemblage of exclusive enclave, promotional language, the visual appeal of an idealised image, and, as ever, international education as commodity. Nearly invisible to passers-by from even a medium distance, the school's visible iconicity (as an enclave or a haven) would exist only at the very local level, apparent probably only to local residents—or the clients of the school themselves, which is perhaps the main point. It appears more important, in this example, that the "Oasis for Learning" is promoted and sold to prospective clients, or re-branded to current clients, most of whom could be assumed to be members of the TCC, for these are the people who would frequent the school's website. By extension, the international education on offer within therefore remains an exclusive product to be advertised or branded, a product mostly unavailable to those who

are not part of the TCC. Such exclusivity can be further enhanced through cornerstone and marquee events, or other media spectacles that bring together the various fractions of the TCC.

A royal opening

On March 7th, 2017, Copenhagen International School (CIS) held its official opening ceremony for the new campus, an event that highlights how fractions of the TCC come together around iconic architecture; the event also provided a unique branding opportunity. In the context of architecture's potential as an expression of power, Relph (1976/2008) argues that official events can "reinforce the authoritative significance of these places" (p. 36). What follows is a photograph from the *Copenhagen Post* (Hawener, 2018), a local English-language newspaper that covered the grand opening of the new campus, showing the event's guest of honour—Princess Benedikte, sister to the Queen of Denmark:

Figure 16. Princess Benedikte at CIS new campus opening ceremony. From "Copenhagen International School opens new campus in style," by L. Hawener, 2018 (http://cphpost.dk/ community/copenhagen-international-school-opens-new-campus-in-style.html). Copyright 2018 by Hasse Ferrold.

Other guests who could be considered members of the TCC's state and corporate fractions were also present, as the image's caption reveals:

> Among the other dignitaries present were (left-right) Maersk owner Ane Mærsk Mc-Kinney Uggla, CIS chair Brit van Ooijen, Princess Benedikte, Copenhagen mayor Frank Jensen and Merete Riisager, the minister for education. (Hawener, 2018)

Royalty is probably the greatest symbol of elite status, and here the international school achieves a kind of royal approval (an achievement that must surely rank above the TCC *state fraction*, although it could be argued that some global corporations and the TCC wield greater power, in some instances, than the state, or a royal family*)*. One can add to this royal status the more familiar TCC representation: the mayor, symbolizing the TCC *state* fraction; the chairperson of CIS, who is also the Head of Global Learning (HR) for Maersk Oil, symbolizing the TCC *technical* fraction in her dual role; the media, or *consumerist* fraction, writing supportive and uncritical articles; and, of course, the owner of Maersk, symbolizing the *corporate* fraction. As a reminder, Maersk, through its philanthropic arm, the Møller Foundation, was the principle donor to the new campus. Maersk's relationship with the school was obviously symbolized by its owner's presence at the event, but what was unlikely reported anywhere in the media was the following unique branding opportunity before and after the opening ceremony as captured in photographs by an employee and shared with me:

Figure 17. Maersk shipping containers at CIS grand opening (7 March 2017). Image reproduced with permission of photographer.

This photograph was taken from a CIS school window, and the shipping containers are directly across from the school's main entrance where all the guests for the opening ceremony would have entered. Around a dozen containers with the Maersk name and logo have been neatly arranged, but in the background one can see how the shipping containers were usually stacked—mostly randomly (as I had observed previously, and as reported by a few employees with whom I spoke). Underscoring the artificiality of this brand promotion, next is a photograph (Figure 18) taken shortly after the end of the opening ceremony—when

all the guests, dignitaries, and media had left—in which the wall of Maersk containers is now being removed (vantage point a few windows to the right from previous photograph):

Figure 18. Maersk shipping containers removed after CIS grand opening (7 March 2017). Image reproduced with permission of photographer.

Yes, *other* containers in the zone still display the names of various other transnational brands, such as Hyundai in this photograph, but the stacking presumably is never so deliberate. Obviously, the proximity of the school to a shipping port made for a unique situation here. The school is one of the first buildings in this former industrial area that is being transformed into a sustainable mixed-use, but primarily residential, neighbourhood. This shipping zone will also be transformed (disappear) eventually. What this Maersk container episode demonstrates, though, is not only the intertwining of the TCC and international schools but also how these schools can serve as consumer spaces in surprising ways.

Although much of its built environment takes into consideration the impact on well-being and learning, Copenhagen International School has likely become better known for its new campus's appearance than for anything specifically related to education; for example, according to the school's website (CIS, 2018), as of 2018, the campus has now won a number of architectural awards, including an "ICONIC Award," which is an offshoot of the German Design Council:

Figure 19. CIS new campus factsheet. From "Factsheet" section, by CIS, 2018 (https://www.cis.dk/welcome/the-new-campus/nordhavn-campus-factsheet).

According to the *ICONIC AWARDS: Innovative Architecture* website (Iconic World, 2018), winning one of their prizes "guarantees you international attention," and "Winners are portrayed in our ICONIC Magazine and presented online in the ICONIC DIRECTORY" (Competition page). This directory, though, lists hundreds of "winners" for the 2017 "Innovative Architecture" category alone, including Copenhagen International School. One is reminded, here, of fee-charging creative writing competitions in which everyone gets published and everyone is therefore a so-called *winner*. To summarise, iconicity revolves around fame, symbolism, and aesthetics (Sklair & Struna, 2013, p. 760), drawing on the TCC's consumerist fraction to reinforce this iconicity through the regular use of words like *icon* and *iconic* (p. 749-50) in the media. While this architectural iconicity symbolises the exclusive product of international education on offer within the iconic building, iconicity, as Sklair and Gherardi (2012, p. 66) have argued, can be the product itself. The building, then, is a product, part of an assemblage that includes international education as product; and products, of course, often rely upon branding to reach consumers.

International schools as consumer spaces

This section will now focus on the spaces within and around international schools, and how the materiality of some taken-for-granted objects like posters, or seemingly innocuous branding practices, can relate to a school's iconic architecture. In addition to branding via websites and promotional material, schools draw on cross-branding to elevate the value of their exclusive product, an international education. Finally, language, particularly metaphors of space, can further emphasise or promote the iconicity of a school building. Taken together, then, branding, language, and iconic architecture form part of a larger assemblage of power that is bound up with international education and the TCC.

Marketing and branding

The first example of how marketing and branding are used in the context of international education can be seen in an advertisement (Figure 20) for International School Basel (ISB) that would have greeted passengers, in October 2015, as they exited the Basel-Mulhouse-Fribourg airport on the France-Switzerland border:

Figure 20. ISB advertisement at Basel-Mulhouse-Fribourg airport (October, 2015).

This poster is both part of, and adds to, the consumerist space of airports—places where convenience and practicality and standardization make "uniqueness subservient" (Relph, 1976/2008, preface). For Augé (2008), an airport represents non-place: "spaces formed in relation to certain ends (transport, transit, commerce, leisure), and the relations that individuals have with these spaces" (p. 76). Moreover, "the link between individuals and their surroundings in the space of non-place is established through the mediation of words, or even texts" (p. 76), such as how the poster puns on the words "landed" and "take-off." Also, advertisements using common nouns have "evocative force," Augé (2008) argues, and so "Certain places exist only through the words that evoke them, and in this sense they are non-places, or rather, imaginary places: banal utopias, clichés" (p. 77).

Across the bottom-left of the school's poster is a rather woolly, even clichéd, tagline using the kind of common, abstract nouns Augé (2008) argues can be so evocative: "ISB: where Inspiration, Engagement & Collaboration come to life," which is presumably meant to imply the school's values. Such woolly or vague educational buzz words help create an abstract metaphor (of a place coming to life), evoking Augé's (2008) non-place, or "banal utopia."

International School Basel, of course, actually *exists*, and it might be a very good school all things considered, but the school that the poster (prominently displayed in the non-place and consumerist space of an airport) is selling through this "mediation of words" is an imaginary place. The poster's evocative force, particularly through language, is likely meant to impress any TCC member or local elite who lives in the Basel region and does not already send her child to this school. It is a fascinating assemblage of text, image, and symbolic concept of space, an overlay of transnational and consumerist space where the international school space is projected beyond its brick-and-mortar walls through the advertisement for the product of an international education; however, the product is both the education *and* the school space, an (imaginary) "non-place" on offer in another non-place, the airport, itself a mix of global mobility and consumer space.

A similar example of an "invasion of space by text" (Augé, 2008, p. 80) is evident in the following advertisements (Figures 21 and 22) in the Nordhavn S-train (urban-suburban) station in Copenhagen. The new campus for Copenhagen International School is located not too far from this station, and the photographs were taken in July, 2018, almost two years after the opening of this new campus. The large advertisement appears above passengers in an exit stairwell as they descend from the train platform (and it should be noted that this train stop also serves the United Nations' regional headquarters, itself only minutes from the school):
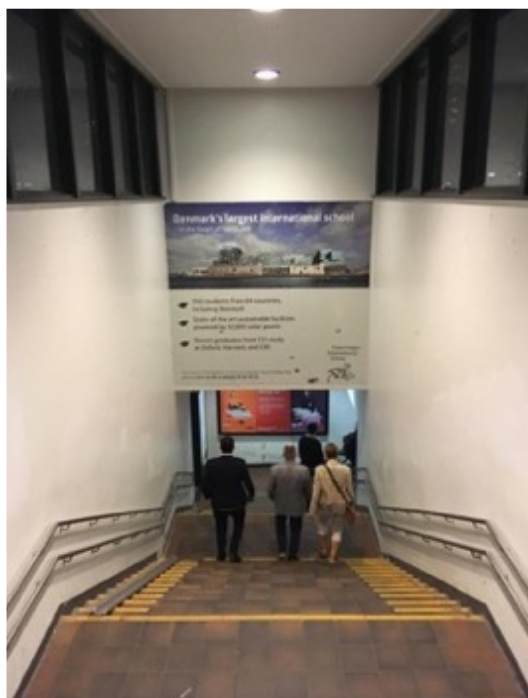
Figures 21 and 22. CIS advertisements in the Nordhavn S-train station exit stairwell (3 July 2018).

The school building features prominently, occupying nearly half the surface area of the advertisement poster. Also, the second bullet point refers to the building's design. As I discussed earlier in this chapter, the reference to the "12,000 solar panels" was a central selling point in the school's communications to parents, local media, and beyond—an architectural characteristic that contributes to the building's iconicity. The third bullet point selectively notes that recent graduates (we do not know how many) went on to study at elite tertiary institutions, so the poster has an air of elitism or even cross-branding.

The ever-expanding global business of international education, in a move away from traditional small-roots origins, means that international schools are becoming increasingly standardized through curricula and architectural design, which perhaps puts them in danger of becoming non-places. As Augé (2008) argues:

> 'Anthropological place' is formed by individual identities, through complicities of language, local references, the unformulated rules of living know-how; non-place creates the shared identity of passengers, customers or Sunday drivers. (p. 81)

One might add to that list of shared identity created by non-place the passengers in airports who are potential customers of an international education product. Augé's contrast between anthropological and non-place could be applied to the shared identity of international school families—the clients—most of whom are members of the TCC. The international school (for the students and parents) and the transnational workplaces (for the parents) are set apart from "local references" and tend to revolve around just one language, English. One might also argue that the often globally mobile lifestyle of international students makes them "passengers" in these schools, in a sense passing time, pausing, until the next move and the next transnational space of privilege. At the same time, any sameness or standardisation of international schools can offer students—and their families—familiarity, comfort, continuity, and temporary stability. But, then again, so does a McDonald's restaurant in countless cities across the world.

Any uniqueness or individuality of international schools appears at risk of becoming subservient to the needs of an increasingly globally-mobile clientele whose children must seamlessly integrate both socially and academically upon arrival at each successive international school. Also, the ease with which images of iconic building projects can be shared online, promoted and lauded, might reinforce a particular design trend. The ubiquity

of the International Baccalaureate—across its primary, middle, and diploma years programmes—aids integration through academic standardization. One can also see a continued preference for the utilitarian aesthetic of the international style of architecture (concrete, glass, steel), a style easily replicated or shared via transnational architectural firms or international competitions where images of such schools are promoted via the Internet and publications directed towards the international school community. What can result is architectural standardization and familiarity, like the airports or supermarkets of Augé's (2008) supermodernity. Finally, and in addition to a building's iconicity, banal and clichéd words (advertisements) evoking educational utopias further mark international schools as consumer spaces, and the product for sale is an elite (Western) international education. The marketing of this product or commodity reinforces the idea that school space can extend beyond its brick-and-mortar boundary, particularly through branding and cross-branding, be it online or in print, in an airport or a train station.

A final example of branding, and how language in the media can promote and evoke iconicity, can be seen in a *Financial Times* online article in which Pickard (2013) reports on overseas franchising of the British brand of education via elite UK schools like Harrow and Dulwich College. These schools now have satellite campuses in various Asian countries. The article quotes a Dulwich administrator:

> '[T]he architecture of the Dulwich College satellites is modelled on the original school. We want to create a sense of the school abroad and have rebuilt our *iconic* [emphasis added] buildings. There is also the uniform, the use of the crest,' says Joseph Spence, master of Dulwich College. (Pickard, 2013)

The administrator alludes to the symbolic value of the uniform and crest as part of the Dulwich brand, like a luxury good recognizable for its logo or pattern. Nike's swoosh and Burberry's tartan come to mind. Exporting and recreating the original school's "iconic" architecture further enhances the brand's value, or status. In other words, as Sklair and Struna (2013) argue, "Anything that can be sold, therefore, can be made iconic through commercial heightening of meaning" (p. 753). The heightened meaning of the crest and iconic architecture would be the supposed pomp of an elite private school, which is replicated, re-packaged, and branded for consumption abroad. The result is a real place yet still somewhat imaginary, for it is merely a copy of a brand, what might be understood as another example of Auge's (2008) "banal utopias."

Cross-branding

Returning to the airport poster from International School Basel, this advertisement incorporates cross-branding, a common marketing strategy. In the following image, three abstract logos near the bottom-left show the international education and accreditation organizations with which the school is associated: first, the International Baccalaureate (IB); second, the Council for International Schools (CIS); and, third, the New England Association of Schools and Colleges (NEASC):

Figure 23. ISB airport poster, cross-branding (October, 2013).

Figure 23 represents an example of how

> Visual imagery, textual overly information and identification of the enduring values associated with the brand are present in the branding of educational products. (Cambridge, 2002, p. 236)

Both the IB and the school would benefit from their mutual association: the IB brand "increases its value when associated with successful students and well branded schools" (MacDonald, 2006, p. 210), and the school benefits from the IB brand because of its globally dominant position as curriculum provider and examiner. Such cross-branding, MacDonald (2006) argues, helps establish exclusivity, and exclusivity can solidify a school's market dominance by creating an entry barrier for new schools that do not have such an established relationship (p. 210).

Below is another example of cross-branding that appears at the bottom of each page of the website of Institute International de Lancy (IIL), a private school in Geneva, Switzerland. Featured prominently are the logos of the International Baccalaureate, Cambridge International Examinations, and the Groupement des Ecoles Suisses qui préparent au Baccalauréat Français (GESBF):

Figure 24. Screenshot of cross-branding on website of IIL. From "homepage," by Institute International de Lancy, 2016 (https://www.iil.ch/en/).

Again, the point is that the schools and the examination or curricular organisations derive mutual benefit and status through this cross-branding. In still another example, below, Harrow International School in Beijing (HISB, 2016) lists a range of organizations such as Edexel, an examination body (part of Pearson, a multinational corporation that awards learning qualifications); the Federation of British International Schools in Asia (FOBISIA); The Duke of Edinburgh International Award programme; and, like Basel International School, the Council for International Schools and North Eastern Association of School and Colleges:

Figure 25. Screen shot of cross-branding on website of Harrow International School Beijing. From "About us" by HISB, 2016 (http://www.harrowbeijing.cn/AboutUsphilosophy.aspx)

For a final example of this common approach to cross-branding by international schools, Institut Floriment—a private Catholic school in the Geneva area that includes an international section offering the International Baccalaureate—also has an array of logos and cross-branding on its website, from external exam boards to accreditation organisations to exclusive groups representing private schools:

Figure 26. Screenshot of cross-branding on website of Institut Floriment. From "Homepage," by Institut Floriment, 2016 (http://www.florimont.ch/en/)

While international schools understandably do need to find ways to validate for clients the kind and quality of education on offer, Cambridge (2002) argues that "The establishment of quality standards through accreditation constitutes an important part of the franchising process," evident in, for example, the IB's trademarked logo and its "World School" designation (p. 231), which both International School Basel and Institute de Lancy cross-brand. The IB's "World School" designation means that the school offers all three of the IB programmes: primary, middle, and diploma; however, as a logo and concept, this designation also could carry symbolic connotations of goodness, the Earth itself, much more so than the word "global," in comparison. (Naturally, all schools are *world* schools; that is, on or of this world.) Appearing on a poster or other marketing material, without a detailed explanation, "World School" could convey a warm and fuzzy feeling of inclusion that transcends political or cultural boundaries, perhaps like a Fairtrade symbol, or a *world music* cd with cartoonish ethnic caricatures on the cover that one used to find for sale in a well-known global coffee chain. It is ironic, of course, that such "World Schools" are closed to most people in the *world* other than members of the TCC or local elites.

Like Institut Floriment above, some selective academies in Australia offer the IB and promote the programme as suitable only for the top students. Doherty et al. (2012) argue that "Such branding enhances institutional reputations, and the IB's presence as a parallel offering can serve as a cream-skimming device through explicit/implicit selectivity" (p. 316), although the authors also note the lack of literature to support claims of superior outcomes associated with such elite-status branding of the IB curriculum (p. 328). Returning to Cambridge's (2002) line of analysis, while the extrinsic or tangible properties of the IB, for

example, might centre on the pragmatic transferability of the education, the intrinsic or intangible properties might be promoted on such posters as the ones examined earlier in this chapter; these intangible properties might also be promoted on school websites or in magazines, conveying a vague, positive feel or atmosphere about the school and its product on offer (international education), which extends to themes like "'internationalism', 'inclusiveness', and 'multi-culturalism'" (p. 233). Any inclusiveness or multi-culturalism in this sort of context would likely be *within* the school's population, and not necessarily *among* or *including* the local community. (Interestingly, although they often boast of having over one-hundred different nationalities, international schools tend to be monocultural in terms of third culture kid identity, as discussed in chapter 2.) These abstract themes and words can also extend to metaphorical language as part of the branding process; metaphors of space, the focus of the next section, are also bound up in the wider assemblages of power that include an exclusive education (product), privileged spaces, and iconicity.

Metaphors of space

The following analysis examines language in advertisements and through branding that some international schools use to highlight their status, or to set them apart from—or *above*, to use a spatial metaphor—other schools. Designations such as "first-class" or "world-class," for example, imply travel and privileged mobility, as well as private or exclusive areas with distinct boundaries and limited access—in other words, spaces of exclusion. "Metaphors of area space," as Paechter (2004a) conceptualises this sort of language,

> are those that are concerned with dividing up, with inclusion and exclusion, and with the drawing of boundaries, and are some of the most long-standing, not just in education, but in thinking about knowledge more generally. (p. 451)

First-class, of course, symbolizes exclusivity. It also implies that there is at least a second-class below it offering a substandard experience or product, which could very well be a secondary education provided in an international school's competitor, or the local school, across town.

In addition to branding their image and product through posters in public or semi-private spaces like airports and train stations, international schools can also turn their own hallways into consumerist space through the use of metaphors of space. As Paechter (2004a) argues,

An examination of the ways [that] metaphors are used in educational discourses is illuminating of the assumptions that underpin those discourses and the ideological commitments (conscious or unconscious) of those who use them. (p. 450)

The educational discourse, however, is carried out through advertisements which imply that some sort of educational discourse has already happened. Language, in particular a spatializing metaphor, can lure one into thinking that the advertisements are merely presenting the results of that discourse. One example (Figure 27) comes once again from Copenhagen International School (where I was a teacher), which has used promotional posters within its campus spaces; in other words, they advertised to themselves. These posters, which also appeared in local print newspapers, sometimes used as a backdrop or invoked—in what is almost a reverential tone—the International Baccalaureate programme, *The IB*, as it is known colloquially:

Figure 27. CIS' "To IB or not to be?" hallway poster (2016)

Here, the pun on Hamlet's existential uncertainty and grief is deemed a non-question, the implication being that an IB education—as product—is the only option. The poster answers its own question, though:

> Only the International Baccalaureate, with close to 4000 member schools, offers a truly international first-class education…And with the IB Diploma you will be ready to take on the world and a globalized future…

The elitist "first-class" tag emphasizes the exclusivity that "Only" introduces, and yet the reference to 4000 schools, a bandwagon advertising technique, highlights the global

influence. Language, in a way, commands this hallway space in front of the poster, emphasizing the commodity and highlighting an abstract transnational space that detracts from the experience of being in that real-world space, of being in a *place*. The "4000 member schools" reference also hints at an elite club of sorts; a further critical stance would understand this membership as part of an assemblage that aims to achieve global dominance, conquest, or modern colonialism through Western education. Next, the word "truly" also suggests that other schools, perhaps competing within the same local market, do not offer the same level of that vague internationalism that Cambridge (2002) critiques earlier. This comparative technique, he explains, is called positioning, which denotes how a brand defines itself by its competition, so in

> an international education context, brand positioning would contrast an international education product with its competitors, which might be either a national education system or a different international education product. (p. 232)

In this case, Figure 27, the poster only implies its competitors' sub-standard product.

In a second poster (Figure 28) from the halls of Copenhagen International School, the headline invokes the status of prestigious universities, an unofficial and maybe one-way use of cross-branding, suggesting that a route to these elite institutions is all but assured:

Figure 28. CIS' "Harvard" hallway poster (2016).

The poster uses cross-branding with a sense of legacy in its claim to be "a founding member of the IB." Using the rhetorical schemes anti-climax and bathos, the poster's title also wishes to temper its own boasting with a supposedly amusing reference to what is, in reality, no more than a hobby in the poster's written context, an extra-curricular activity rather than an actual (or acceptable) career path for the school's students. At any rate, rhetorical and symbolic language are used to highlight the transnational space, which itself is more of an abstract concept or way of life than it is an actual *place*. As Paechter (2004a) argues,

> Area space metaphors are, however, not just about what is inside or outside particular boundaries. Metaphors of inclusion and exclusion are also concerned with who is allowed access to particular forms of knowledge. (p. 452)

Perhaps the underlying effect of the poster above, then, is more about reminding the viewer about the exclusivity of this education, the supposed good fortune one has to attend such a school that grants access—partially through the IB curriculum—to exclusive forms of knowledge symbolized by both elite tertiary institutions and vague metaphors about wealth and status.

Moving beyond the hallways of the school once again, what follows is a screen grab from part of an online post on Copenhagen International School's website (CIS, 2016) that announced a "Taster Day" for local families on 22 January 2016:

Figure 29. Screenshot of CIS Taster Day promotion. From "Homepage," by CIS, 2016 (http://www.cis.dk).

Repeating the area space metaphor, "first-class," from its hallway and print publication poster, the school all but guarantees admission to "top universities" through its ability to open doors, a metaphor for the power of merely graduating from the school with the IB education—that is, the product on offer (elite international education) within the soon-to-be iconic building.

For a critical viewer, the "first-class" designation might achieve unintentional ironic or surreal usage in the context of Oryx International School, for its website states how its new campus will "provide a first-class experience with state-of-the-art facilities exclusively for Qatar Airways employees" (2018, News page). Here, the associations of a first-class experience are bound up with an airline known for luxuriousness and exclusivity, as is evident in the following image:
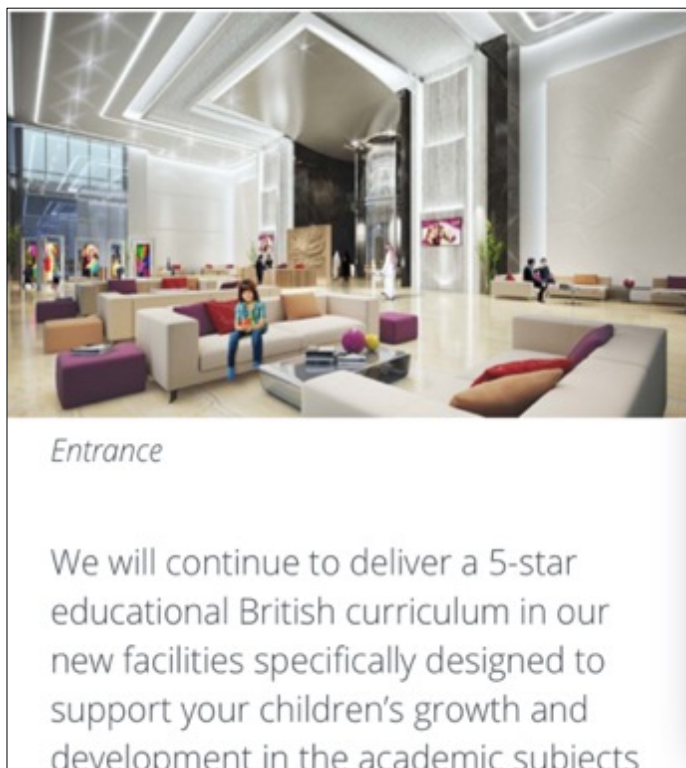
Figure 30. Screenshot of "5-star" education at Oryx International School. From "Mesaimeer Campus," by Oryx International School, 2018c (https://oryxschool.qa/new-campus).

In addition to the school's main entrance having the appearance of an exclusive airport lounge, the school claims to offer a "5-star" education, which represents an extension of Paechter's (2004a) conception of "height-privileged metaphors of hierarchical space," metaphors that "are essentially about separating individuals from each other" (p. 458). In the example above (Figure 30), the separation extends to the implied superiority of this school

over others. Rather than, say, *top of the class* or similar achievement tables, "5-star" comes from the corporate world (service industry), suggesting the highest possible service and experience, as well as an exclusive space (area space metaphor), of course.

Lausanne International School, in Switzerland, has similarly used metaphorical language, claiming to provide a "'world-class education,'" its director claimed, but as it related to iconic architecture, for this claim was in the context of a 2015-inaugerated "brand-new world-class campus" costing 46 million Swiss francs, according to the school's press release (Scanlon, 2015). The inauguration ceremony attracted "more than 100 dignitaries, corporate partners, media and architects from around the commune of Vaud" (Scanlon, 2015), an announcement that unintentionally provides a succinct and telling roll call of Sklair's TCC fractions. And like the cornerstone and grand opening events at Copenhagen International School, the *state fraction*—here the Syndic of Le Mont-sur-Lausanne—was on hand at the inauguration to announce the school's local importance: "'This CHF 46 million CHF project over two years has certainly been important for the economic development of Vaud'" (Scanlon, 2015). The implication is that a new (iconic) building project at an international school, which serves and is partially funded by the TCC, can boost a local economy, thereby cementing the school's worth to the city. The local and regional notoriety of the building project, aligned with potential global fame, as connoted by rhetorical language like the "world-class education" available at a "world-class campus," establish iconicity for what is an exclusive space of education. It is an assemblage of various members of the TCC fractions (local dignitaries, media, corporate funding and school governance), branding, metaphors of space, and, of course, an iconic building project. This assemblage exists for itself, for the TCC, not for any social justice or enabling of education at the local level. While the students at the school might live locally, the school itself is a global or transnational space of privilege that is closed to all but the local (wealthy) elite and members of the TCC.

To summarise, the influence of the TCC, with respect to an international school's large-"T" Transformation (iconic building) project, would begin with direct or indirect funding, then perhaps progress to recognition of that funding via the Internet or press releases before construction begins. Along the way, media articles, cornerstone events with high-profile attendees (members of the various fractions of the TCC), and ongoing branding contribute to the building's iconicity. What tends to be ignored, but what I have attempted to address through the Media Hub project, are the everyday spaces of education at international schools

(chapters 7 and 8). Instead, some large-"T" Transformation projects at international schools, arguably, are meant to achieve local or global iconicity through a unique or striking architectural design or outward appearance, ultimately in the service of reaffirming and projecting the TCC's global power.

Conclusion

Although Sklair (2010) only briefly notes the increasing commercialization of schools (p. 149), his analysis of consumerist space maps well onto the industry of private international education:

> The crux of the matter, in the context of consumerism, is that while logically it would appear that consumerist spaces need to be public to facilitate spending, sociologically it is clear that much consumerist space operates as restricted public space, that is, restricted to those with the means to buy what is on sale. (p. 148)

International education at a private international school is limited to those who can afford it, and those who can afford it tend to be employees of transnational corporations or other global organizations that often subsidize or entirely pay school fees for their employees; the schools' clients can also be independently wealthy transnational capitalist elites, or wealthy locals seeking whatever advantage they feel such a school offers their children, as discussed earlier. Most people in the world do not have the means to buy what is on sale in a "World School."

International education can be seen as a product or commodity that is also sold to the host city, its international (transnational) community, and wealthy locals; it is a product, as discussed, that can even be branded and re-sold to the transnational clients themselves through inward-looking promotional material that often draws attention to the school's outward-looking iconic architecture. As part of international education, being internationally-minded is an admirable ideological goal, but pragmatically it could also mean being aware of the future opportunities to be enjoyed on the path to continued membership of the transnational capitalist class, membership secured through an international education that is "effectively, western liberal and Anglo-centric, raising questions of cultural and linguistic imperialism" (Hayden, 2011, p. 220). Moreover, Hayden (2011) argues:

> It is ironic, then, that schools that developed originally to promote greater social harmony and understanding between different peoples, as well as to facilitate mobility, seem to be contributing to a growing educational gap between social groups and thus to growing inequality in societies. (p. 221)

To this growing inequality, symbolically highlighted by iconicity, one could add other criticisms—the increasing uniformity of design, standardization of experience (sameness of curriculum), and, perhaps, a resulting creation of placelessness, or "non-place" as Augé (2008) describes. As this chapter has demonstrated, exclusivity and increasing homogeneity can arise through iconic building projects that draw on architecture's international style of modernist lines, glass, concrete, and more concrete and glass. From afar, some of these school buildings could easily be mistaken for office buildings. International schools might come to symbolically resemble Massey's (2005/2014) science parks by becoming *"Easily recognisable, replicated over and over,* [and] *scattered around"* (p. 143, italics in original).

This chapter also examined how language is used to market or brand a school. Metaphors, Paechter (2004a) writes, "are important both as indicators of the ways we think and as rallying-cries for particular world-views" (p. 450). When international schools claim to offer "first-class," "world-class," or "5-star" educations, they betray their intimate connection with the TCC and its world-view, a "culture-ideology of consumerism," in which the TCC works to "commodify everything" (Sklair 2016, p. 330). This commodification appears inextricable from space, and specifically how international school spaces emerge as particular assemblages of power and prestige.

Finally, this chapter revealed how the local and global intertwine in the context of international school space and design. In the widest sense we have the transnational space of the transnational capitalist class (TCC), which is connected with consumerism, global mobility, and access to exclusive spaces. Narrowing in, we have the spaces of international school buildings in a local context—spaces that are local yet double as exclusive global spaces (as symbols of TCC global mobility and status). These spaces, I have shown, can become consumer spaces through a building's iconicity that is then marketed and branded across both space and time via websites, local newspapers, transportation hubs, and even a school's own hallways. The drive for iconic (large-scale) building projects risks ignoring the value of the everyday materiality of schools, from hallways and stairwells to classrooms and books, a materiality that can impact students' experience of learning and perceptions of place. The following chapter therefore turns to the value of small-scale design interventions and small-"t" transformations that could serve as a counterpoint to iconic architecture.

Chapter 6: Competition for the Media Hub

Introduction

The previous chapter considered the relationship among the transnational capitalist class (TCC), iconic architecture and international schools. I argued that the TCC can project and assert its power through international schools' iconicity, providing a visual reminder that these are privileged spaces of education. Iconicity, marketing, and cross-branding serve to position international education as an exclusive product, an unsurprising positioning in light of Sklair's (2016) claim that the TCC's wider agenda, its culture-ideology, is to turn all space into consumerist space. Decisions about grand building projects take place at the administrative and governing board levels, with the latter often having clear ties to the *corporate* fraction of the TCC. From this wider context of space and power—a realm in which teachers and students have little, if any, power—I now turn to the everyday spaces and classrooms within international schools, and investigate how power is negotiated there. In comparison to large-"T" Transformation projects, these classrooms represent opportunities for teacher empowerment or autonomy with respect to the design of learning spaces.

This chapter begins by examining the early stages of the Media Hub's development, including the competition between departments to develop the space, and how different staff members or departments had expectations of ownership and access. What emerged from my interviews and informal discussions with teachers, particularly from the English department, was that it was unclear who truly owned or controlled the Media Hub space as it initially developed. Ownership in this sense means belonging to just one department, a traditional approach to apportioning rooms and spaces in a school. Different people or departments thought that they had control, or would have control, over the Media Hub, though. Since "Power relations are inscribed into the buildings and material practices of the school" (McGregor, 2004a, p. 3), ownership or control of a space can take hold through timetabling, bookings, usage, proximity, funds, material objects, or even the explicit and official school designation of it as a specific departmental space. I will therefore examine how the contestation of space was bound up in material assemblages—everyday objects and artefacts, the spatial configuration, and even language. These *things* of education contributed to how staff negotiated power in the context of the Media Hub's development, which had implications for not only claims of ownership but also teachers' pedagogical approaches and

the kind of learning space that emerged. At the same time, the positive side of the competition for the Media Hub is that it grew out of teacher autonomy over the creation and design of a learning space as developed through my participatory action research (PAR) project.

I also consider metaphors of space, which can function as metaphors of inclusion and exclusion. Understanding language as part of sociomaterial assemblages means understanding space as interactional, "the sphere of the continuous production and reconfiguration of heterogeneity in all its forms—diversity, subordination, conflicting interests" (Massey, 2005/2014, p. 61). Such conflicting interests, in the context of the Media Hub, included tensions between the pattern language-design of the space (its intended use) and its actual use. The design or spatial configuration also includes, of course, any of the mundane material *things* that are part of educational settings or events, from posters to pencils to books, for such material things "act together with other types of things and forces to exclude, invite, and regulate particular forms of participation" (Fenwick et al., 2011, p. 4). Participation, in the form of decisions that teachers make—whether independently or collaboratively—about the configuration and design of spaces, has implications for feelings of ownership, and represents empowerment in the context of what is usually a lack of significant control over school spaces. Just like material objects themselves, these decisions about the built environment can contribute to the kind of learning space that emerges, who participates and when, or who is excluded. Social actors, then, assemble with the material things of education, and together help constitute space and contribute to its ongoing construction—and contestation.

As I interpret the data in this chapter, I try to acknowledge my own biases and sometimes personal attachment to (sense of ownership of) the Media Hub, as well as the limitations (and benefits) of interpreting participants' words. I draw on observations, field notes, photographs, and interviews with staff members who were closely connected with the project or perhaps frequent users of the space; however, I focus on a few key interviews with influential social actors: the principal, Steven, who was ultimately in charge of all spacing decisions; Mary, the former head of English who negotiated our intercampus move, which was apparently supposed to bring the Media Hub space under the domain of the English department; and Carol, a long-serving member of the English department, and probably the most vocal critic of how the Media Hub represented a supposed loss of space for the English department.

Given their *social locations*, "the patterns of social relationships in which [people] are enmeshed" (Hammersley & Atkinson, 2007, p. 180), these participants' insider knowledge and perspectives proved highly revealing and useful, although some caution is necessary given the possible effects on data, such as wish-fulfilment and social identity (p. 180). Overall, this chapter therefore aims to demonstrate how power can be expressed and negotiated in unexpected ways in relation to the materiality of space. Through the lens of sociomaterial theory, I will also examine how the pattern language design was bound up in assemblages that influenced competition for the Media Hub.

Ownership claims

> Who is in charge? Because no one owns the, the rooms anymore.
> (Carol, English teacher)

To recap, I proposed the creation of the Media Hub after it had remained unused as a learning space for a full academic year. The space had previously been the library for the primary school, but then, provisionally, became part of the secondary English department after the construction of a new primary building and subsequent secondary campus reshuffle. At the time, I was teaching full-time in the English department, but also in the process of joining the IT department one-third of the time, teaching a newly created Video & Animation course. This IT course would take place in the Media Hub, so the space was driving, and also a product of, course creation. The Media Hub, I proposed, would be a modern information and communications technology (ICT) space centred on collaborative learning and, crucially, at least partially available to all students and teachers at all times, especially because of the two separate, yet connected floors. Part of my motivation for proposing the Media Hub was to create an exciting learning space in which ICT could be integrated in all subjects. Although I teamed up principally with the IT department head, Craig, to make this project happen, I also had the English department's territorial claim to the space in mind; I was keen that this department should not lose the space entirely, for it was "my" department and I felt some loyalty to it, a feeling that had the potential to alter my role as researcher.

Because the Media Hub space lay dormant for a year, the secondary principal started entertaining ideas for how the space could be used or to whom it might transfer in ownership, I learned early in 2012. This situation likely would not have happened had the English

department started purposefully using the space for teaching, or even as an office (an early idea within the department), immediately after moving to this building in September, 2011, after the campus reshuffle. Instead, for nearly an entire academic year (2011-12), the space was used for storing surplus classroom tables, as well as many of the English department's books and resources. Figures 31 and 32 show how the upstairs floor originally looked (as viewed from the entrance):

Figure 31. Upper floor of Media Hub, view from entrance (March, 2012).
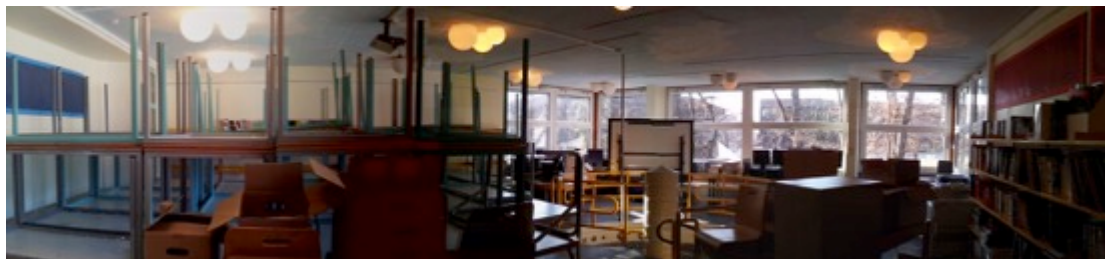
Figure 32. Panoramic shot from the same vantage point as Figure 31 (March, 2012*)*.

When asked about the background to the departmental allocation of this space, the former head of English, Mary, who negotiated our move to the building, said:

> Unfortunately, I don't think anything was really put in writing by the powers that be. Uh, a gentleman's agreement, which perhaps I was foolish to agree to, uh, but one doesn't expect that it would be, uh, you know, rescinded or things will change.

Indeed, this sense of promise, a sense of guaranteed ownership of the space was felt and expressed by others in the department, likely influenced by Mary. In my interview with Carol, an English teacher, she several times echoed Mary's viewpoint, saying for example:

> When we moved across, for a whole year it stayed in limbo, because there was no cash; it was still promised to us and then suddenly we were told that it had gone to the IT [department] and we were not very happy about it, no.

This sense of perceived ownership as a "promised" space appeared to be reinforced by the materiality of the space, such as the books and other resources belonging to the English department stored there. In addition, just outside the entrance was the small information sign for the room denoting its designated use as "English IT Department" (Figures 33 and 34):

Figure 33. Media Hub entrance sign close-up: "English IT Department" (March, 2013).

Figure 34. Media Hub entrance, view from foyer, signage at left of photograph (March, 2013).

At the time I took this photograph, I did not even consider or question who had created the sign and why this name had been chosen for the space, which perhaps speaks to the mundane

and taken-for-granted nature of room signage in a school. Upon reflection, though, the name appeared curious. The signage represents an official designation and suggests the English department's ownership of the space, but with a dual purpose, maybe even dual ownership between the English and IT departments. The description was an odd one, partly because it had no precedent in our school, and likely did not hold much meaning for either department. If anything, the signage seemed like a holding designation until the space itself took shape, for it was uncertain in the 2011-12 academic year exactly how the English department would actually use this space. One additional idea was to make it a quiet reading space for English classes and students.

Despite a sense of ownership implied by the material assemblage of signage, books, boxes, and other objects belonging to the English department, the one-year dormancy of the space probably weakened the English department's ownership claims in the eyes of the principal and other departments. Proposals then emerged to transform the space for other purposes or departments. As a result, I proposed the concept of the Media Hub before the space would be entirely lost to our department, for I was a full-time English teacher at the time, keen to have our department use this unique and promising learning space with our classes.

According to Steven, the principal, however, no promises had been made to the English department for exclusive ownership of the space:

> Yeah, yeah, absolutely, I mean, they [English department] thought they were getting something that they didn't even get, but actually they'd never been promised it, they just made some presumptions about what was going to happen.

Mary thought differently, though, as seen earlier with her point about the "gentleman's agreement" that she claimed was in place. In addition, her language in the following exchange suggests that the space was used as a sort of bargaining tool or an enticement, somewhat like a bribe, to relocate to this building:

> Well, so you see, part of the deal of moving was that we got the ground floor of the Old Primary [The building that was home of the Media Hub, and English department among others], and by that I understood everything.

This ground floor ("everything") included the eventual Media Hub space, six large classrooms, a large departmental office, and a small assembly hall that the English

department intended to use as a creative or performance space that she assumed to be part of the "deal" (see Figure 41 on p. 171 for an image of the building's floor plan).

Betrayal

In yet another moment in our interview that touched on broken promises or even deception, Mary speaks of her original belief that the Media Hub space was to have been exclusively for the English department, but

> Instead of which we suddenly find the rug's pulled from beneath our feet, and we're having to fight again for what we thought was ours.

Her rug metaphor implies that the English department had been tricked, a sort of betrayal committed by the principal, Steven. This theme of betrayal also arose during my interview with Steven, but in a different context. In the following exchange, our conversation has just turned to departments being clustered together, how they have a physical domain, and how their respective individual teachers have ownership of their rooms, a situation he was not in favour of. He contrasts this traditional ordering of departments at our school with the Media Hub's looser designation, then touches on the theme of betrayal:

> Principal: You've been lucky in that your room, the Media Hub, is not allocated to a specific department other than IT, and so therefore you've been slightly liberated from some of the constraints that the other departments might have claimed they have.
> Me: Yes, that was one of the original tenets of my proposal, like, let's not make it anybody's.
> Principal: Absolutely, which some of your colleagues in the English department thought you were Judas for—
> Me: <laughs> I know that.

Interestingly, he refers to the Media Hub as "your room," which could imply my control over the space, or my symbolic ownership of it as project leader. He notes that the space is currently allocated to only the IT department, not a true designation of official ownership but rather an allocation for the original purpose of the space: integrating ICT in all subjects; however, this partial "allocation" still establishes a degree of ownership, especially as the IT department, at that time, was the only department with timetabled lessons (albeit few) in the space. The word "allocation" also implies that someone has the power to allocate the space, which of course would be the principal. His acknowledgement of this partial allocation, as

principal, is something of an official endorsement of what would become the IT department's increasingly stronger claim to the space.

The most striking idea in the exchange above, though, is the allusion to Judas, how I represented this archetypal symbol of betrayal to some members of my department. Although I reply "I know that" when I hear this allusion, I had been aware only that some members of the English department were not pleased with my successful proposal for the Media Hub, which had resulted in a loss of *exclusive* departmental space. I certainly did not think that their animosity towards me, their feelings of betrayal, were strong enough to see me as a Judas figure, according to the principal. While this view of me was not surprising, I found it a little unfair because I viewed the Media Hub as a compromise that would keep the space in the realm of the English department. My feelings also reveal that I felt a sense of ownership of the space because it was my creation and reflected the power I had been granted by the principal to go ahead with the project. The force of this archetypal allusion of betrayal reflects the intensity of the competition for the Media Hub, and perhaps how (perceived or real) ownership of space can be so important to teachers and departments.

Spatial metaphors

Because the social and material assemble to create space, these assemblages can also include the language used to conceptualize, describe, demarcate, and claim ownership of space. Spatial metaphors in particular appeared to be bound up in the competition for the Media Hub. My original intention for the Media Hub was for a learning space that embraced serendipitous mixing of classes or subjects in addition to planned ICT integration in all subjects. After the initial verbal pitch of the Media Hub to my principal in February, 2012, I then submitted a formal written proposal with the title: "Proposal for a Media Productions Center and Learning Space (Media Hub) in the Old Primary Library." "Media Productions Center" is broad but connotes a space easily identifiable with the English department, while "Learning Space" remains open and could represent any subject; however, that openness is undercut by adding the name of the space, "Media Hub," which naturally reinforces the media productions concept and nudges users towards a particular use of the space. In other words, in naming the space I wanted it to remain identified with the English department, thus drawing a boundary that could imply the exclusion of certain departments or teaching approaches.

I also recall wanting to avoid a name that included any version of "computer lab," a traditional designation for a classroom with computers, primarily associated with an IT department. In the several years preceding the creation of the Media Hub, two of the school's existing computer labs were almost exclusively used by the IT department, usually for timetabled IT classes, although other subjects could use the limited free blocks there for projects incorporating IT (but usually limited to word processing tasks or online research). The other computer lab, in a neighbouring building, was actually known as the "Language Lab," a space designated for and mostly controlled by the modern languages department through timetabled or blocked lessons—a form of ownership, in turn, reinforced by the name; however, the Language Lab was also available to other subjects during limited free blocks. Unlike the word "lab," in *computer lab* or *language lab*, a word connoting disciplined investigation or exploration through the scientific method, the name "Media Hub" connotes creative activities more likely associated with an English course: the study of print and digital journalism, or film and media studies, for example. The second part of the space's name, "Hub," suggests a meeting point, maybe also a place of activity or busyness, reinforcing the pedagogical goal of active and collaborative learning, which was at the heart of the Media Hub proposal.

In my interview with Mary, I asked her to comment on the name "The Media Hub" and her alternative name for it that she had suggested earlier in our interview, "The English Studio":

> Me: I wonder, then, if something, if a space was called something like "Studio," I don't know if you mean like "Media Studio" or just "The Studio"?
> Mary: I don't know.
> Me: That—
> Mary: The English Studio. <laughs>
> Me: The English Studio.
> Mary: English and Media Studio. <laughs>
> Me: Would that influence usage? Who goes there? And say, "oh, maybe I can't go there." For instance, math department going to the theatre, they wouldn't go there 'cause it's a theatre.
> Mary: Well, there you are, you see. That would stop them going.

The names reveal how she might still view the space as belonging to the English department. They would also denote that the space would be *only* for the English department. "The Studio," with its connotations of a particular kind of creativity (media) that one might easily associate with English in a secondary school, is an example of what Paechter (2004a) terms a metaphor of area space, which "divide[s] up knowledge, putting it and us into fenced-off

boxes," similar to how university instructors, or even secondary school teachers see themselves as members of distinct fields (pp. 451-452). Mary's final words here, "That would stop them going," was both a joke and not a joke, showing a desire to contest and possess the space; to prevent others—in this case, maths—from accessing the space.

Because "Spaces, including educational spaces, can be essentialized as being only for certain activities rather than others" (Fenwick et al., 2011, p. 148), a spatial or area metaphor like "Media Hub" could serve to exclude other subjects that are not traditionally seen as being creative in the way that literary and media studies (in an English department) connote creativity, perhaps extending to creative pedagogical approaches. Similarly, "computer lab" could exclude certain subjects by suggesting a pedagogical approach or identity that is limited to the technological and scientific. A metaphor of area space, such as *The Media Hub* or *The Studio* or *computer lab*, not only defines "a specialism as against other areas, but separates it off from what is common knowledge; it denotes a specialist area, an enclave" (Paechter, 2004a, p. 451), which is similar to Fenwick et al.'s (2011) point above about essentializing educational spaces.

Krishnan (2009) argues that an anthropological reading of academics would conclude that "disciplines are a form of social segregation" (p. 21). Such segregation can be bound up in familiar spatial metaphors such as "territories," "fiefdoms," and "silos," which can position knowledge in a "geographical territory," one that can even be fought over (p. 12). These "geopolitical metaphors," (Krishnan, 2009, p. 12) in universities, have some relevance for the "Media Hub," because area space metaphors can come to be metaphors of inclusion or exclusion, "concerned with *who* is allowed access to particular forms of knowledge" (Paechter, 2004a, pp. 452-453, emphasis in original). Compounding the problem was the competition for the space among a few departments, with the materiality of the Media Hub projecting and asserting an IT identity and ownership. According to Hunley and Schaller (2009), "Territoriality and the ownership of highly prized rooms by individual departments decrease the use of the spaces and therefore decrease learning" (p. 34). Although the authors do not detail what form this learning might take, their broad conclusion implies that this learning would only be associated with a particular subject (department), such as art or IT. The Media Hub (or hypothetical *The Studio*) metaphor—as part of an assemblage that includes a non-traditional spatial configuration—could also serve to exclude teachers who are more traditional in their pedagogy. Because all students must take English each year in our

secondary school, theoretically all students would have access to the Media Hub and whatever forms of knowledge are produced there, but limited to the context of that subject. Moreover, students would be limited to forms of knowledge associated with teachers (subjects) that would choose to use the space, which itself was designed to encourage and support non-traditional pedagogical approaches.

Paechter (2004a) also argues that spatial metaphors "have ideological force" and "the potential to steer us into particular ways of thinking about, and going about, the processes of education" (p. 460). In this light, the name "Media Hub" reflected, to some extent, an aesthetic vision, but also, more significantly, a non-traditional spatial configuration, one that developed through my collaboration with Craig. Our vision, for a learning space centred on collaborative and non-traditional approaches to learning, shaped this emergent space and influenced its name, while the name (metaphor) reinforced that vision. In addition to contesting space through language, the everyday and sometimes taken-for-granted *things* of education can have a sort of agency that becomes bound up in the competition for space.

Contesting space: the material force of *things*

Throughout my data collection period, I observed numerous material *things*, such as posters and signs on walls or doors, as well as artefacts or objects left behind by students and teachers, that sometimes symbolised, or served to contest, ownership of the space. These material *things* included dictionaries and novels, such as the texts that have been left behind by James' Year 10 English class in this image:

Figure 35. Dictionaries in Media Hub, downstairs corner (13 November 2013).

Of course, students will always forget things in a classroom, leave behind textbooks and personal items like pencil cases or jackets; however, the presence of these material objects specific to English could serve as visual reminders to other users of the space that the Media Hub is where one studies English; the objects signal, too, that someone might be coming back, so the space is, in that sense, reserved for English. These books left behind in the Media Hub can represent what McGregor (2004c) describes as "space-time stretched out beyond the limits of" a department's officially designated space (p. 364). Still, the predominantly IT identity of the space was difficult to contest, given the overwhelmingly IT material assemblage of timetabled lessons (presence), desktop computers, headphones, SD cards, film equipment (both in storage and scattered within the space), and even posters and objects on the walls.

Posters

As leader of the Media Hub project, and because I was part of the IT department as a teacher of the Video & Animation course, I was responsible for most of the early decisions about spatial configuration, which included material objects such as the movie posters, dominant in the visual field of users, on both floors:

Figure 36. Film posters, downstairs Media Hub (4 June 2011).

My decorative or aesthetic choices—as the person who was primarily responsible for the space's development—also represent, albeit inadvertently, a way to claim space, to assert the IT department's ownership of the Media Hub. As Bissell (2004) argues:

> Teachers use the walls and other elements of the classroom to display things as a way of claiming the space as their own, as a reflection of who they are as a teacher, and as a communication device to make personal connections with the students and to actively engage the students in learning. (p. 29)

Similarly, McGregor (2004c) argues that "The work lives of teachers are shared with objects which help configure and define their work and identity, and are part of spatially constituted subject subcultures" (p. 349). The subculture here, as symbolised by the posters, would be considered information and technology (the IT department) as represented by both film and animation.

I had two goals behind the addition of the film posters in the Media Hub: the first was to enliven the space by adding attractive visual objects on the wall. These posters would be a reflection, too, of the work (Video & Animation studies) that would often occur in the space. The second goal was to find posters of films that were based on famous novels, which would reinforce the study of literature while also symbolising the English department's (increasingly tenuous) claim to the space; however, I had difficulty finding any reasonably attractive *and* literary film posters other than ones associated with fantasy and sci-fi genres (*Lord of the Rings*, for example). A main worry I had was that fantasy or sci-fi posters usually depict male figures, so these images would suggest a stereotypically gendered space. Instead, I turned to film posters from various genres that would better represent a gendered balance, be it from plot, imagery, or direction. In a way, these posters would reflect who I was as a teacher (my values, and even my film interests), to draw on Bissell's (2004) point above.

My authority (power) to make these decisions about what went on the walls came out of my role as project initiator and leader, and I often tried to use this position to ensure that the original ideas and philosophy of the Media Hub were followed. My authority also derived from how the IT department had increasingly stronger claims to the space, for its budget covered the purchase of most of the furniture and all of the aesthetic objects, such as the framed posters. Through my membership in this department, I would have asked Craig, in advance, for the IT department to cover the cost of the posters, and chatted with him about my ideas, which he was often supportive of. Such discussions and decisions about the Media Hub were frequent and spontaneous, for I shared an office with Craig and other members of the IT department, even though two-thirds of my teaching load were still with the English department.

Authority, then, emerges through a curious sort of assemblage consisting of (1) the relationship between Craig and me (as the main collaborators on the Media Hub), and the power or status we had: he as the head of IT, which included budgetary control that could be funnelled into the Media Hub, and me as the project initiator and leader; (2) our sharing of an office (an exclusive space), which enabled regular discussions and decisions about the space; and (3) the proximity of that office to the Media Hub. Being near the space meant always visiting it, sharing design ideas while standing in the space, envisioning changes and developments. This power to decide what would go on the walls or doors would be difficult for other teachers or departments to contest, for the assemblage basically excluded them from the decision-making process. While the focus of my analysis in this chapter is on how departments and teachers compete for space, it is worth noting that, whether in the Media Hub or in a classroom, students rarely have a say in what goes on the walls, which is typical of schools, according to Kohn (2011). Chapters 7 and 8, though, will explore student agency.

In a shared classroom, subject-specific posters no longer seem as innocuous as in a one-subject or one-teacher classroom. For example, by claiming all the walls of the Media Hub with IT artefacts, the IT department effectively prevented other departments from claiming the space in a similar manner (or via student work), especially because the posters were framed. In addition to being heavy and therefore harder to move, framed posters have an air of permanence; they have depth and mass, and convey durability. Student posters or work, on the other hand, tend to tear easily, have flimsy moorings such as staples, pins, tape, and sticky putty. Frames tend to convey greater importance or value, and perhaps even a sense of immutability. At the same time, solidity or apparent durability does not guarantee immutability, just as Denis and Pontille (2013) found in their study of damaged wayfaring signboards in the Paris metro, for "Public lettering is fragile lettering" (p. 8), they argue. We might understand posters of student work (which almost always have words other than work for art class) in a shared classroom to be a kind of public lettering: fragile because they are subject to the agency of other forces or actors, yet at the same time embedded with agency themselves as part of a material assemblage: the frame and its precise location, the poster with its textual and visual symbolism, and the ownership of the artefact.

And more posters

Posters represent everyday objects that contribute to the atmosphere of a room, yet one rarely critically examines what goes up on walls in hallways and classrooms, perhaps because of the

familiarity or ubiquity of such objects, or perhaps because we assume that they are put up with the best of intentions. By looking at what is on the walls, Kohn (2011) argues, one can get a sense of educational or pedagogical attitudes (p. 134). Both Paechter (2004a) and Fenwick et al. (2009) examine this sort of taken-for-granted nature of educational spaces, while McGregor (2004a) highlights how "The common physical arrangement of schools…has such a taken-for-granted quality that we rarely question either the genesis or the effect of such orderings" (p. 2). In the Media Hub, one example of this mundane or taken-for-granted materiality was a series of small posters promoting programming, computer science, and a film workshop for students, that were taped to both the inside and outside of the Media Hub's glass entrance doors. I discovered the presence of these posters on a return visit to the Media Hub in February, 2014 (during my two-year sabbatical). Craig had put them up, a simple act of power, but perhaps one that reflects the PAR nature of this project, how responsibility for the Media Hub's appearance and configuration shifted to Craig when I left. I would have rejected these posters, in fact, for they too obviously promoted the subject of IT on its own, rather than ICT integration within other subjects, a central tenet of the Media Hub's original philosophy or vision. At the same time, it can be argued that these new posters were simply an extension of the IT-related materials that I had already put on the walls of the Media Hub, so the identity and ownership of the space had already been established. The following posters (Figures 37 and 38), taped to the glass entrance doors, and facing inwards, used notable figures in American society, such as Facebook founder Mark Zuckerberg and (now former) American President Barack Obama, to promote computer programming:

Figure 37. Barack Obama poster, inside left of Media Hub entrance doors (February, 2014).

Figure 38. Mark Zuckerberg poster, inside right of Media Hub entrance doors (February, 2014).

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Zuckerberg's quotation draws on the current status of English as a core subject, or as something central to education, thus aligning programming—and its trajectory—with the core educational importance of reading and writing. Two more similar posters were fixed on the outside of the door, one of Yahoo CEO Marissa Mayer, and another of Chris Bosh, a professional basketball player in America's National Basketball Assocation. The posters, prominantly displayed on the entrance doors, remind users that they are entering an IT space; and the posters on the inside (pictured above) can also remind students that they are *leaving* an IT space, rather than just a learning space where students in any subject happen to integrate ICT into their other practices.

Objects, according to Thompson (2015):

> can invite human actors into a way of doing or being. Of course, these are
> not just friendly invitations as objects may also exclude, regulate, entice, or obfuscate.
> Objects do and are therefore, political: both permitting and prohibiting. (p. 2)

The posters on the doors of the Media Hub, on the walls inside, as well as the numerous other IT-related artifacts in the space, all invite and promote ways of being an IT student, of *doing* IT-related activities. These "friendly invitations," to borrow Thompson's (2015) phrase above, simultaneously invite, entice, and exclude (non-IT subjects or traditional pedagogies), a reminder that space can carry different meanings for different people at different moments. The posters also have the goal of elevating the overall status and value of IT (the subject) as it relates to wider socitey. Thompson's (2015) claim that objects—in my example, posters—become political through *doing* relates to my analysis in chapter 5 of the branding and promotion of international schools through posters in public spaces like airports and train stations. These posters (objects), which promote and brand the school, are meant to entice prospective clients by highlighting (selling) the school's status and iconicity; at the same time, these objects exclude those who cannot afford to send their children there. While the posters exist on their own, as singular objects in these particular spaces (as well as the hallways of a school, like Copenhagen International School), they should still be understood as part of the wider TCC-iconicity assemblage, an assemblage saturated with power. Thompson's (2015) argument above reinforces the idea that we should not assume that objects are only small or inconsequential things, yet much of the literature on learning space design ignores the value or agency of such taken-for-granted objects. Of course, an object can be a big *thing* as well—a building is an object, a reminder of how chapter 5 (*International*

Schools and Iconic Architecture) was necessary to establish the wider view of space and power in the context of international schools.

Each poster, or object, that relates to IT as a subject or pursuit of interest helps to reinforce the space's identity as an IT space. A parallel example can be drawn with another secondary school subject, physical education (PE). McGregor (2003), referring to the PE offices she observed in her ethnographic study, describes "assemblages of measuring tapes, stopwatches, fixture lists, balls and trophies," concluding that "The department is thus a configuration of people, objects, technologies, practices and ideas" (p. 361). Similarly, the Media Hub can be understood as an assemblage of desktop computers and SD cards, headphones, computer game wall decals, programming posters on the entrance doors, film posters, and pedagogical philosophy (non-traditional teaching and learning) embedded in the spatial configuration of desks and chairs. Unlike a departmental office, however, the Media Hub space required on-going negotiation between numerous teachers representing different departments. As McGregor (2003) argues, "space is not pre-given, static or completed; it is always in the process of becoming" (p. 354). Such becoming might arise through both subtle and overt contestation bound up with the everyday objects or things of education.

An interesting approach to foregrounding the everyday objects of education might draw on Adams and Thompson's (2011) concept of "interviewing" an object. Akin to interviewing a research participant, one might interview a technology "in an effort to disclose its material agency in co-constituting teaching-learning worlds" (p. 734). Drawing on the etymology of the word *interview*, and its roots in the French verb *to see*, the authors summarise the concept here:

> Thus to 'interview an educational artifact' is to catch insightful glimpses of the artifact in action, as it performs and mediates the gestures and understandings of its employer, involves others, and associates with other objects in the pedagogical environment. (p. 734)

This concept is in the same vein as Orlikowski's (2007) point that a shared essence of sociomaterial ideas—from actor-networks to relational materiality to material sociology—is the *"insistence on speaking of the social and the material in the same register and of not reverting to a limiting dualism that treats them as separate (even if interacting) phenomena"* (p. 1437). Through register, through language ("interview") and connotations of agency and human activity, the object is foregrounded, accorded equal status; after all, laws granting

equal status to individuals—or even, as some argue, animals and nature—take form and force when they are put into words, words that come to have shared agreement in meaning and value. An object may not be able answer in words like a human (although the object might spew out printed or recorded words—human language—or have words written on it, or might elicit words from others), but its responses to being "interviewed" (questions need only be posed to it) can emerge from its actions, its material force, which the interviewer (researcher) must interpret. In this sense, the sociomaterial researcher is always interviewing the object, so the value of this metaphor is not to give a human-style voice to an inanimate object, but to reinforce its agency. To draw a parallel, archeologist Charlotte Pearson says of the world's oldest trees, the Bristlecone pine: "'Something that began growing at the time of the Pyramids has a right to say stuff…It gets to comment'" (Ross, 2020, p. 51). Perhaps the material objects of education in a sociomaterial context should get to comment. If so, an interview is a good place to start.

Vignette: *interviewing* the laptop trolley

While ownership of space can be asserted through timetabling, or presence, or subject-specific posters, other *things* and assemblages can also serve to *contest* space. One such contestation centred on a disagreement over the Media Hub's entrance area that I had with James, when he was the head of English. This vignette focuses on the taken-for-granted yet performative nature of a laptop trolley. To provide some context, one problem with the Media Hub's spatial configuration, I believed, was that it lacked a defined and successful ENTRANCE TRANSITION[14] pattern, a kind of liminal space that would signal to users that they were entering a unique and interesting space. Perhaps this absent pattern explains why, one day in September, 2013, I arrived at the Media Hub to find that the English department's laptop trolley, which housed twenty-four laptops shared amongst all the English department's classes, was no longer in its usual spot in the foyer that bordered the Media Hub and several English rooms; instead, it had migrated to just inside the Media Hub entrance, resulting in an awkward and unsightly spatial configuration for an entrance that was already rather drab and unsightly, what with the grey tiles, hospital-green door frame, and plastic rubbish bin in still more drab shades of green:

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[14] ENTRANCE TRANSITION: "what matters most is that the transition exists, an actual physical place, between the outside and the inside, and that the view, and sounds, and light, and surface which you walk on change as you pass through this place" (Alexander et al., 1977, p. 552). The authors believe that the pattern applies to a wide variety of entrances, not just houses.

Figure 39. Laptop trolley in Media Hub entrance (17 September 2013).

The laptop trolley, I believed, had negative implications for the experience of the entire space. It would be easy to assume that it was just another material object, like the teacher's desk in a corner, or a clock on the wall. Although the trolley did not really block the entrance, it certainly occupied—dominated, I thought—the visual field. I feared that, merely by its presence, the trolley's new location would become accepted and established over time, likely preventing any future development of this entrance space.

The trolley's grey and drab appearance deadened the space, I thought, emphasizing the utilitarian and explicitly IT purpose of the Media Hub suggested by its early, inherited layout of desktop computers arranged side-by-side around the room's perimeter. I also interpreted the trolley's new location here as a contestation of space—the use of a material object by the English department to claim space, even if it was unintentional. In this reading, the object had agency; however, "agency is not a property of a person or an entity, but a relational effect of heterogeneous assemblages" (Postma, 2012a, p. 57). Certainty the laptop trolley became entangled in struggle and negotiation, which speaks to the material relations associated with this object: its intended and actual purpose, its appearance, the space it occupied or altered, who "owned" it, how it came to be there (it was put there by *someone)*, and so forth. In this light, the laptop trolley is clearly not only a taken-for-granted *thing* but also a heterogeneous assemblage, one that has agency.

The laptop trolley's migration from its usual location in the foyer outside the Media Hub likely occurred for a few reasons: often, teachers from the English department would forget to lock the trolley's door, or students would forget to return laptops, so there had been some talk in the department about moving the trolley into a classroom, just as the maths department

had done with their own laptop trolley; moreover, because the electrical outlet in the foyer sometimes shorted out, laptops would not charge properly, if at all, which impacted teaching and learning. Dead laptop batteries meant ruined lesson plans, teachers scrambling last minute. The trolley had looked somewhat out of place and awkward in the foyer, too. It also partially blocked a fire cabinet:

Figure 40. Laptop trolley in foyer, view from Media Hub entrance (June, 2012).

James had moved the laptop trolley into the Media Hub, it turned out. His role as department head likely bestowed upon him greater authority to move objects, a reminder of how the material is embedded in social structures or relations. His action also suggested that he (symbolising the English department) felt that the English department still had a strong claim to the space. I confronted James about the trolley's location in the Media Hub entrance. I was upset because the object was an eyesore that did not enhance any use of the space, and because I had not been consulted—as the initiator and leader or the Media Hub project, I was revealing my own sense of ownership of the space. I told James that the trolley could not stay there, that the Media Hub entrance was not an English department space, and that—perhaps most importantly to me—the trolley made the space look terrible, to which he replied that my argument was just a matter of "aesthetics." I interpreted this comment as a way to dismiss my concerns and authority, his implication being that the appearance of a space was a superficial matter, and that aesthetics had little value in a school's spatial configuration.

The contestation of space that centred on this entrance-laptop trolley assemblage supports Massey's (2005/2014) argument that space is "always under construction," and that we should "recognize space as the product of interrelations: as constituted through interactions"

(p. 9). After my discussion with James, I asked Craig, as head of IT, to intervene and help get the laptop trolley out of the Media Hub, which is an interesting shift in my loyalty, perhaps, from the English department to IT. A driving factor behind my proposal of the Media Hub, to remind, was to help the English department avoid losing the space entirely. With respect to challenging the presence of the laptop trolley, though, my main motivation was to ensure the Media Hub was aesthetically pleasing, and would function as intended through the patterns. Of course, any such intentions were bound up in a particular vision of what Craig and I thought an ICT learning space should be, which I discuss later in this chapter. In the end, with Craig's help—an example of Massey's (2005/2014) point above about interrelations and interactions—I negotiated the laptop trolley's return to the foyer. The following year the trolley disappeared altogether, for the school adopted a bring-your-own-device computing programme. Turning from a focus on the influence of a material object's presence, such as posters or a laptop trolley, I now consider the force of human presence in the Media Hub.

Contesting space: proximity and presence

An additional way to compete for the Media Hub arose, intentionally or not, through presence—that is, certain teachers taking their classes there, simply using the space, being there. Overall, along with IT, the maths and English departments were by far the most frequent users of the Media Hub in the first two academic years, which is unsurprising given these departments' proximity to the space. For some English teachers, the mere fact of maths teachers using the space, whether officially timetabled or through booking free periods there, represented a challenge to what was perceived as the English department's tenuous claim to (an earlier) ownership of the Media Hub.

When proposing the Media Hub project, I had anticipated that the English department would come to capitalize on its proximity to the space, as the diagram below of the building's ground floor should elucidate. The Media Hub's entrance shared a foyer with six English classrooms and the IT office. (A similar layout on the floor above housed the maths department.) Also, on the same floor of the Media Hub, further down the hallway, one can see two more English classrooms in the following floor plan:
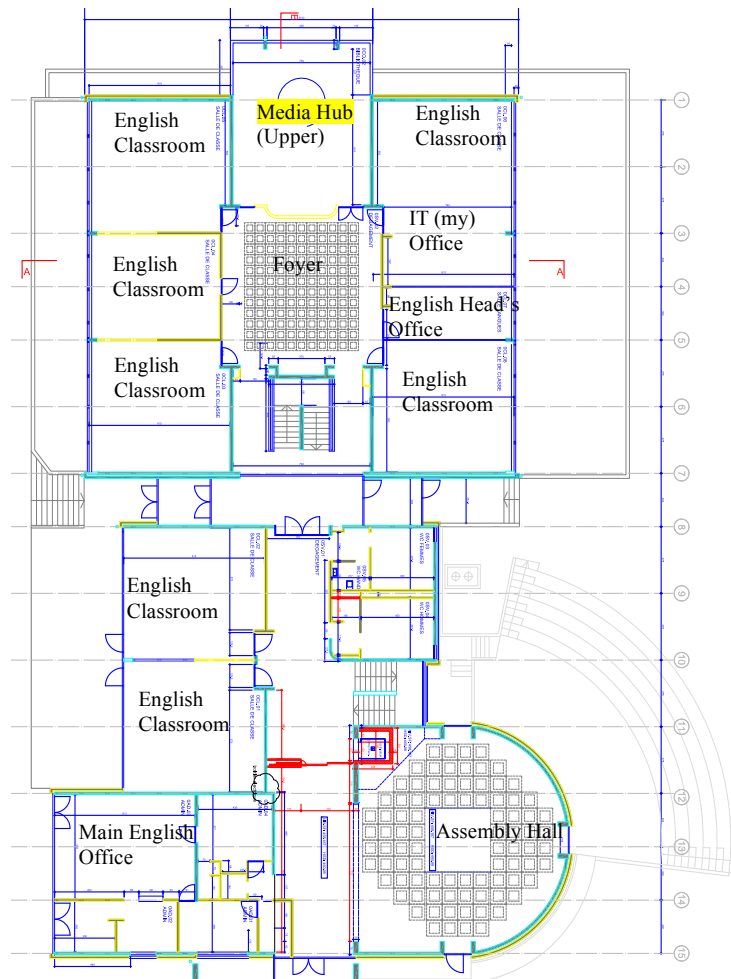
Figure 41. Floor plan of Media Hub building, ground floor.

From the 2013-14 to 2015-16 academic years, IT courses were consistently timetabled for 15 or 16 periods (out of a possible 50) in the Media Hub. English courses timetabled there more than doubled from four periods in 2013-14 to ten periods in 2015-16, because the new head of English, James, had made a concerted effort to timetable more English classes in the space. This timetabling only happened if particular teachers were keen to teach in the Media Hub, though—some were not, which could have been a matter of teaching style, level of comfort in the space, or their preference to be in only one classroom rather than two or three. The authority or officialness of the timetable would have likely helped these two departments feel a sense of ownership of the space to some extent, but the *non-timetabled* use also appeared to have significant implications for contesting the space.

When the Media Hub was not timetabled for particular courses, teachers from any department could book the space through the school's online management software. One contentious

issue that arose from this situation was *block-booking*, whereby a teacher or department would book a particular period for many successive weeks or even the entire year, in effect reserving it for either one teacher or anyone from that particular department. Carol, during our interview, raised the block-booking issue in relation to Charles, a maths teacher who also did the timetabling for the secondary school:

> Carol: 'Cause the guy who does the roomings uses it quite a lot for Mathletics.
> Me: Yes.
> Carol: And it's block-booked. We were told we couldn't block-book it, and he block-booked it. So there's a lot of—I think somebody needs to put their foot into it—no, I think somebody needs to put their foot into it and say, you know, don't take me for an idiot, this is what's happening, so, so let's sort it out.

Her metaphor "to put their foot into it" suggests conflict, a way of asserting power, of challenging the supposed control of space through block-booking. She also said:

> You can't forbid people. But you could maybe—I mean, we're repeating ourselves—but go back to block-booking it, the same for English, for what we need it for. And then if there's space, then, guys, use it…even if it's Mathletics.

Almost as an afterthought, she dismisses Mathletics once again, with the word "even" emphasising the lack of value that the Mathletics activity seems to hold for her.

Assumptions that some of us in the English department made about maths' presence in the space was not validated by the booking data, though (see Appendix B). The overall booking figures reveal how much more than maths, or any other department, the English department booked the Media Hub in its first two years; however, by the third year of the Media Hub's existence, the two departments differed by only one booked period overall. Again, it is hardly surprising that English and maths, the two departments located closest to the Media Hub, had the highest number of bookings.

Charles (the timetabling person), indeed, was the maths teacher who most frequently booked the space. Over the Media Hub's first three years, Charles represented 27% of his department's bookings in the space, but only 0.08% of the total bookings for all teachers (from all departments) over the same period, so hardly a monopoly of the space. More than the supposed departmental territorial threat that Charles (as maths teacher) or other maths teachers symbolised through booking and teaching in the space, what seemed to be the issue

for some teachers in the English and IT departments was *how* Charles or other maths teachers were using the space in relation to its design and intended use.

Tensions between design and actual use

McGregor (2004c) notes how "the school or classroom keeps its recognisable shape or configuration because some materials and structures maintain relational patterns for longer" (p. 355). In the case of the Media Hub, the need to keep cabling costs low and installation easy (each influences the other) led to the horseshoe arrangement of the twenty-four computers along the walls, a traditional computer lab configuration that perhaps reinforces traditional power structures because the horseshoe provides complete surveillance of students' screens by the teacher. This kind of spatial configuration can easily become embedded in school practice, or entrenched in the imaginations of students and staff, and a sort of circular logic takes hold: a computer lab should and must look this way because this is how computers labs look. The Media Hub's evolution into a non-traditional learning space would challenge not only recognisable patterns and configurations of classrooms but also traditional pedagogical approaches.

The pedagogical philosophy of the Media Hub (a non-traditional layout over two floors, encouraging movement and collaboration) was embedded in and reinforced through the wider material assemblage of wall displays, material objects, furniture, spatial configuration, and some teacher practices; however, the intended pedagogical use of the space, as expressed through the design, was often at odds with its actual use. In transforming the Media Hub, Craig and I had a particular vision for the kind of non-traditional teaching and learning that should be happening in this space, which in many ways matched what Steven, the principal, wanted to see in our school. In this next exchange, I have just asked Steven if there was anything he would like to see done regarding promotion of the space:

> Steven: I think the thing to do is promote it not as an IT room, is promote it as a room that offers different layouts for learning.
> Me: I gotta say, you know, between you and me, that's always what I wanted, that was the original proposal. And because it's sort of IT, you know what happens in a school, is people become attached to it for whatever reason—
> Steven: Well, I think that's why we've gotta do it in a room that's not IT.

While he is implying here that the space is not completely an IT space, or should not be seen this way, the fact is that the IT department budget covered nearly all the furniture and objects

in the space—the "stuff," as Brand (1994) calls these objects, which is basically anything that is moveable, non-permanent. It is no surprise, then, that the IT department would increasingly feel a sense of ownership of the space. The exchange with Steven also reveals my own belief that the Media Hub had established a firm identity as an IT space. In fact, I had been encouraging the head of English, James, to contribute part of the English department's budget to some of the furniture purchases for the Media Hub so as to lay a stronger claim to the space. My intention was not necessarily to give more power over the space to the English department, but rather to prevent the IT department from taking complete ownership, which would go against the original vision of a learning space for all subjects but that focuses on integrating ICT.

Contrasting the value of the Media Hub as a space that offers different teaching and learning opportunities through its "different layouts for learning," the principal noted the traditional approach to classroom spaces in our school:

> Steven: You know, we still, unfortunately, have this thing where departments have a suite of rooms, and, by-and-large, a teacher has a room and that's how it works, you know—
> Me: Yeah.
> Steven: —we've gotta sort of break away from that a bit.

However, his point about the staff's adherence to traditional spatial arrangements is perhaps an unfair criticism given that teachers' attitudes towards school space being organised by department is unsurprising, and likely difficult to change, according to McGregor (2003):

> Seeing schools as composed of apparently internally homogeneous regions such as departments, whether physically or socially located, makes sense to individuals on the basis of their daily experience in secondary schools and the taken-for-granted structuring around separate curriculum areas. (p. 363)

If a traditional spatial configuration informs or guides teachers' daily experiences, one can hardly blame teachers, then, for not imagining a structural organisation different from the traditional departmental arrangement of space. McGregor (2003) also refers to Jacklin's (2001) argument that teaching practices and the material are reciprocally constituted, and that:

> teacher education concerns itself with the social and discursive dimension of pedagogy in uncontextualized ways, while teacher practices in schools related to the use of time, space and resources (objects) are seen as separately the province of

school management (pp. 355-356).

The Media Hub, as a PAR project, therefore represented a way for teacher practice—as it relates to time, space, and resources—to be determined somewhat by teachers themselves, rather than school management, representing a shift in traditional power structure, or at least "province," to use Jacklin's term above. Of course, school management—the principal— shared the pedagogical vision that Craig and I had for the Media Hub. Creating the space would likely have been impossible without his approval; from this approval we were able to receive help and advice from other members of school management and the campus facilities team. While the Media Hub represented a shift in power in this traditional sense, the negotiation of power between departments, or between teachers, continued to be bound up in tensions between design intentions and the actual use of the space. These tensions tended to revolve around the Media Hub's non-traditional spatial configuration.

Bissell (2004) points out how school architecture reinforces traditional work patterns, so teachers with non-traditional work patterns will often make significant changes to a classroom in order to support their views of effective teaching:

> [These] often drastic and desperate modifications that teachers make also point to the constraints that the physical environment place on teachers whose work patterns, orientations, and priorities are centrally non-traditional. (p. 29)

Even within a classroom, a teacher has limited ability to change the environment, and a change by one teacher, of course, could be contested by another, as was seen with the laptop trolley. The lack of power to alter one's built environment appears starker in light of the wider issues of space and power discussed in chapter 5: the TCC-iconic architecture- international school assemblage that creates and reinforces educational spaces of exclusion and privilege, and the fact that significant spacing decisions occur at the management and governing board levels.

Steven also recognised the challenges that staff face, for he talked about how the built environment can change teaching, referring specifically to a large-scale building and transformation project that he led as principal at his former school in Singapore, which resulted in non-traditional spaces and teaching. At our school, in contrast, similar transformations of the built environment and the related changes in staff attitudes towards traditional approaches to teaching and learning had been difficult to achieve, he

acknowledged, because of capital budget planning; simply, big projects were not possible under previous financing models. Even with the immense finances of an international school (usually generated almost exclusively through school fees), budgetary limitations are still a reality. At the same time, international schools, as I argued in chapter 5, can draw on wealthy donors (members of the TCC) for large-scale or iconic building projects. One would not expect to hear of a funding drive, say, for the redesign and refurbishment of merely the everyday classroom spaces of an international school.

As a result of our school's previous capital budget planning, Steven said,

> we had lots of classrooms [that] were ok, but they were just dated, really, and, um, I think the consequence of that was there was—it was very hard to encourage teachers to think about teaching in a different kind of way.

His point echoes Bissell's (2004) argument that

> Except for the most non-traditionally oriented teachers, teachers' use of the classroom environment is consistent with the traditional image of teaching embedded in classroom design. (p. 29)

By making the Media Hub non-traditional in its design, Craig and I had imposed non-traditional approaches to teaching and learning on some teachers whose approaches would certainly be traditional, at least partially a result of experiencing only traditionally configured classrooms. It can be argued that this imposition through spatial configuration was an expression or assertion of power on our part, which one would expect to be challenged or negotiated from the very inception of the Media Hub, for space is "(re)created through politics and ideology" (McGregor, 2004a, p. 4).

Divergent pedagogical perspectives

Throughout the early stages of the Media Hub's development, I regularly noted how the space was being used in traditional ways by various teachers and their classes: students mostly working independently, sitting in front of desktop computers for entire lessons; no student movement or visual signs of collaboration; and word processing tasks or maths games representing the main pedagogical activities. As my office was just meters from the Media Hub, I observed this sort of usage almost daily. I sometimes recorded in field notes my frustration with witnessing these traditional teaching approaches in the space, and often discussed these frustrations with Craig. But Craig and I were not the only teachers who

judged how others used the space, which underscores the ongoing tensions between design intentions and actual use. These tensions can also be seen as a way to contest space, for the emergence of a behind-the-scenes narrative (political or ideological) can serve to undermine how other teachers use a space.

During my interview with Carol (English teacher), she explained her impression of how the maths department was using the Media Hub; her focus was on this department because they were frequent users of the space, often booking it for many periods well in advance. She was particularly critical of "Mathletics," an online maths game in which students solve equations and problems in direct competition with other students all over the world who are simultaneously online. Students perform this task individually.

> Me: You said something interesting about, earlier, the way it's being used by other
>   teachers, other courses.
> Carol: I object!
> Me: In—in, yeah.
> Carol: Strongly. <slight laugh>
> Me: …how is it being used? How is it being, in a sense, like misused?
> Carol: Uhh, well, Mathletics is a kind of, ehm, <dismissive noise> a computer-
>   based, how-to-learn-maths-without-teaching-maths system, so the kids spend
>   hours in front of it, ehm, doing get-through games.

Her tone is dismissive, emphasized by her use of hyperbole ("spend hours"), even though lessons were only 45 minutes, or 90 minutes of a "double" lesson (back-to-back timetabled). "Get-through games," which is equally dismissive or biting, suggests wasting or passing time. Perhaps the harshest criticism, though, is the suggesting that maths teachers are abdicating teaching duties so much that they have developed a "system" by having the students play Mathletics.

My own bias for how I thought the space should have been used is evident in the following exchange with Mary, during my interview with her, when I, too, dismiss the maths department's use of Mathletics:

> Me: I've asked—I've been pushing all year for some changes in the furniture, and,
>   again, with a bit of, uh, collaboration from Craig. We looked at, first of all,
>   there's some high tables that Ikea has that are, they go up and down. I wanted
>   to get kids standing.
> Mary: Yes, moving around.
> Me: So…exactly. So, this idea that, you know, I don't think that, uhm, a teacher—
>   for instance, math—is gonna send a kid down there, or come down with a

class and say, "ok, for two hours now, stand and do Mathletics." They're not gonna like that.

Like Carol—and perhaps influenced by her language during our earlier interview—I used the exaggeration of two hours of Mathletics. Also, the spatial configuration, as I described it here in this conversation, is meant to exclude the maths department based on their supposed monotonous usage of the space through the Mathletics game. I wanted to use the spatial configuration to transform how maths used the space, or, if they did not conform, I wanted to exclude them, which is not only an example of control of space but also a step towards the creation of a space of exclusion. As a PAR researcher, ideally, I should have had greater neutrality, but I always found it difficult to detach from my roles as a long-term member of the English department and creator of the Media Hub.

Such positioning of the maths department as "other" is akin to what Krishnan (2009) has described occurring between academic disciplines at the tertiary level, whereby "Like in all other social groups, group identity is maintained primarily through the distinction between 'them' and 'us'" (p. 22). I was even critical of the word processing tasks that seemed to be the only reason that some other English teachers took classes to the Media Hub, a pedagogical approach that I saw as traditional, lacking creativity, and that did not embody the purpose of the Media Hub's philosophy. My denigration of colleagues' use of the space only for word processing tasks establishes a further distinction—now *within* a discipline—between "them" and "us"; perhaps the traditionalists versus the supposed progressivists. This distinction should not be surprising, for Krishnan (2009) notes: "Anthropologists would argue that the desire of groups of developing some distinct cultural identity is universal and an unchanging part of human nature" (p. 24). For me and some others in the English department, vis-à-vis the Media Hub, the cultural identity seemed to include "creativity" in its traditional sense as part of the arts (a subject like English, for example, fosters "creative" writing); also, in a broader sense, this creativity was meant to include IT courses, such as Video & Animation, which centred on making and collaborating. A creative, non-traditional approach therefore came to be inextricably bound up with the ongoing transformation, identity, and even sense of ownership of the Media Hub as established through the spatial configuration and the everyday artefacts in and of the space.

Vignette: a francophone perspective

Contestation of space can also extend to *students'* preferences and expectations for pedagogical approaches; for example, on 1 May 2014, at the teachers' lunch table in the cafeteria, I followed a conversation between a maths teacher, Wendy, and Maddie, an English teacher, both of whom had one or more classes with exclusively francophone students. This minority francophone stream in our school (on average 60 students across Years 10-13, compared with a single anglophone year group having around 100 students) has a more traditional approach to pedagogy than the anglophone stream, with a strong emphasis on rote learning, student independence and responsibility, and plenty of homework. Maddie was talking to Wendy, who was commenting on her francophone maths students who had recently spent a lesson with her in the Media Hub. The maths teacher had invited them to sit on the "fun, comfy pouf cushions," because they had instead first chosen to bring over the regular chairs—thereby displacing the already-present (pouf) cube cushions—to gather in front of the interactive projector screen at the CAMPFIRE zone (see chapter 7).

She paraphrased them saying something to the effect of: "Madame, we're maths students, we don't sit in fun chairs." The English teacher commented on this quotation by saying that the francophone students were used to traditional classrooms and pedagogy (teacher-centred lessons, an emphasis on rote learning and independent work rather than group work). The Media Hub, then, with its non-traditional spatial configuration and aesthetic, did not align with their educational identity. Rudduck (1980) notes that "Pupils' definitions of school and classroom behavior can be powerful conservative forces in educational practice," so pupils will sometimes seek the familiar, even using "the power of group pressure to lure the teacher back into recognisable routines" (p. 142). Such an expression of power is a reminder of the interrelated nature of the social and material. The Media Hub encouraged—attempted to impose through its materiality—a certain kind of pedagogy, which might have been seen as lacking value or rigor or validity, in the eyes of francophone students, when compared with traditional pedagogy usually associated with their programme and teachers. Another possibility for the francophone students' response could be related to how maths is a core subject, one that is often perceived as being more rigorous than other subjects. Perhaps the francophone students wanted to reflect and project this rigour, akin to how maths teachers, Paechter (2004b) found, often want other teachers to see "how hard they work and the seriousness of their subject" (p. 33).

The Media Hub configuration was inspired and informed by a particular kind of pedagogical philosophy, one that is easily identifiable as Western and easily associated with the culture of international schools and the International Baccalaureate. Also, the underlying philosophy revolved around collaborative learning, a staple description of the sometimes-woolly concept of 21st-century learning. Here is an excerpt from my original proposal in which I lay out part of the space's (my) pedagogical preference:

> With the Media Hub, probably all of the school's students—and many teachers— would use a space designed to facilitate innovative teaching and learning.

One could argue that either I had not considered the francophone approach to learning or I had assumed that my way—a Western anglophone approach—was superior. Proshansky (1983) points out how, too often, those designing or creating spaces (which includes management) are "concerned almost exclusively with expected effects and almost not at all with *unintended consequences*" (p. 222, emphasis in original). In designing the Media Hub, Craig and I assumed we were using "best" practice in terms of what a collaborative and 21st-century ICT learning space should be; however, a cautionary note can be gleaned from Mulcahy's (2012) point that:

> teaching and learning is constituted in assemblages of a social (e.g. professional socialisation, identity formation) and material kind (e.g. curriculum materials; teacher gesture, posture and embodied action). Thinking pedagogy as an assemblage affords a sense of collective responsibility. (p. 21)

Adopting such a collective responsibility would have included a greater sensitivity to how the materiality of the Media Hub would impact the francophone teachers and students, whose perception of a traditional spatial configuration (classroom) is part of a wider assemblage that includes their learner identity. Rudduck (1980) argues that a profound sense of "dislocation" can occur for pupils when schools and teachers use their authority to implement innovative practice which can disrupt conventions in the classroom (p. 142). The word "dislocation" implies a spatial dimension, a reminder of the sociomaterial nature of space.

Conclusion

This chapter examined the ongoing competition for the Media Hub, with a particular focus on its inception and early development, and how a fallow period of a full academic year brought into question the English department's supposed ownership of the space. As a result, some other departments looked to claim ownership. Between timetabled lessons and room

bookings, the English and maths departments were the heaviest users of the space. The presence of these two departments in some way served as a claim of ownership, or perceived ownership, and further tensions arose over advance block-booking of the space. Competition for the space also related to spatial metaphors, including the name that I gave the space: *Media Hub*. Such spatialising metaphors can help shape the identity of a space, suggesting what is or is not possible or appropriate there in terms of teaching and learning; these metaphors might even serve to exclude certain teachers or departments who do not conform to the vision or pedagogy implied by the metaphor.

The chapter also investigated how the taken-for-granted materiality of space is related to the negotiation of power. Mundane objects like posters, books, a laptop trolley, and even cube cushion seats, constitute assemblages that also include teacher identity and pedagogical perspectives. These assemblages, I have shown, were bound up in the competition for space. I also examined how tensions arose between the *intended* use (through design) and the *actual* use of the space. Sometimes the tensions were merely because of how some teachers have a traditional approach, likely because of the overwhelming prevalence of traditionally-configured classrooms in most schools, including ours, whereas the Media Hub represented a novel approach to learning space design on our campus; at other times, tensions arose because of conflicting or divergent pedagogical perspectives amongst teachers or departments. Being critical of how other teachers used the space was another way to claim a sort of symbolic ownership of the space, or to suggest that others did not belong.

I then focused on a subtle yet interesting contestation of space that grew out of the cultural differences of some students in the minority francophone stream in our school, for their views of teaching and learning, which tend to be traditional, appeared at odds with the imposed Western, or anglophone, design and philosophy of the space. Ultimately, I had wished to prevent the space from fully ceding to the IT department, which was developing the strongest ownership claims through the wider material assemblage of IT-related posters, wall coverings, and budgetary control over furniture. The positive side of all this competition for the space, however, is that it arose from increased teacher empowerment. The Media Hub, as a participatory action research project, put control of the design and spatial configuration of a learning space in the hands of teachers. In the next chapter, I examine the negotiation of power in the ongoing development of this space as it related to teachers *and* students, specifically in the context of a pattern language design.

Chapter 7: Patterns and Negotiating Power

Introduction

The preceding chapter centred on the competition for the Media Hub from its inception through some early iterations. I examined how material assemblages, including language and some taken-for-granted *things* of education, contributed to how teachers and departments asserted or contested ownership. This chapter will focus on how teachers *and* students negotiated power in relation to the spatial configuration of the Media Hub. I will examine how certain regions, or zones, created through a pattern language design approach, were bound up in this negotiation of power, such as teachers' control of space and how some students attempted to contest that control. This analysis also aims to capture the value of a participatory action research (PAR) project, an approach to learning space design that anticipates, and perhaps can even embrace, the negotiation of power. A local PAR transformation project, such as the Media Hub, can give both teachers and students some control over space, yet my analysis will show that the ongoing creation of space will always be open to contestation, bound up in material assemblages that can also have implications for students' experience of learning.

I will focus on three patterns, the CAMPFIRE, CORNER SPOTS, and PODS, for they represented significant design approaches that appeared to influence pedagogy, social relations, and the negotiation of power, of course. These patterns also underpinned a few regions that emerged within the Media Hub, and which also featured prominently in the negotiation of power—the *teacher region*, the *slacker region*, and the *downstairs region*. Each region was comprised of patterns that were, themselves, comprised of smaller design patterns (as part of the wider pattern language—see chapter 3). The patterns were meant to be practical design solutions based on my interpretation of contemporary pedagogical approaches and my synthesis of the research on learning space design (chapter 2, pp. 56-67). In line with my conceptual framing (chapter 3), I also incorporate a sociomaterial reading of the space, providing a richer understanding of the interplay between power and space in the context of a pattern language design approach.

A sociomaterial approach, Fenwick (University of Stirling, 2016) argues, prompts questions like, "How do these assemblages become stabilized and become durable in ways that produce

centres of power?" (para. 15). I examine such "centres of power" and their durability in the context of the key patterns and regions of the Media Hub mentioned above. The CAMPFIRE pattern, for example, though meant to disrupt power structures embedded in traditional spatial configurations, still became a "front" of the classroom, a region associated with the teacher. The other two key patterns, CORNER SPOTS and PODS had shifting identities, at times spaces of student autonomy, perhaps for semi-privacy or group work, at other times spaces of discipline. Finally, drawing on Foucault's (1977/1995) theories of space, discipline, and punishment, I investigate how certain regions and patterns in the Media Hub were sometimes used by teachers to reward or punish student behaviour—the normalisation of the individual—a reminder of the unpredictable nature of space and how design intentions can be at odds with actual use.

The teacher region

> An array of objects, things, even "stuff"—what we might call *material actors*—help to perform the pedagogies that happen in [classrooms] (Thompson, 2015, emphasis in original)

A slight alcove made by the concave wall by the entrance to the Media Hub felt like a natural and unobtrusive spot for a presentation area, in front of which we could add temporary or flexible seating arranged in a circle or semi-circle, thereby creating what we termed the CAMPFIRE pattern:
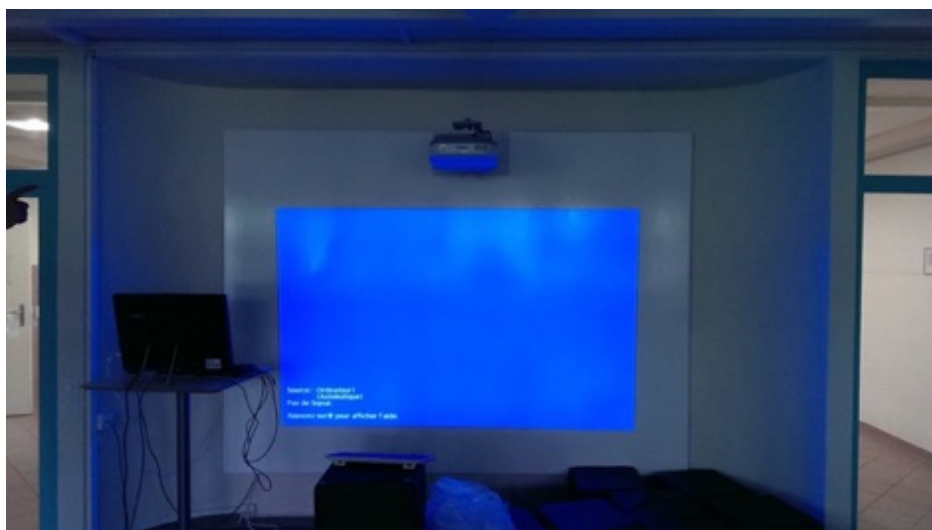
Figure 42. Presentation area at the CAMPFIRE (August, 2013).

Based on my initial research on contemporary learning spaces, and in collaboration with Craig (IT department head), the CAMPFIRE pattern (also a zone) would reflect our underlying pedagogical philosophy for the Media Hub: a space supporting student-centred pedagogy, which meant limiting teacher-centred instruction, and providing more opportunities (space) for informal group discussion and reflection. Moreover, the CAMPFIRE represented built-in flexibility, a zone which students could *choose* to visit, where they might work independently, or come together now and again for discussion and collaboration. The metaphorical name, meant to evoke informality and the symbolic equality of people telling stories while seated around a campfire, proved to be more aspirational than it was accurate, as I detail later.

The spatial configuration of this zone included a semi-circle (sometimes) of cube cushions oriented towards a whiteboard-interactive projector setup in order to facilitate short periods of instruction or presentation. The CAMPFIRE pattern echoed Alexander et al.'s (1977) SITTING CIRCLE[15] pattern and included two of our own patterns, INTERACTIVE PROJECTOR and IDEAS WALL[16]. The IDEAS WALL consists of a whiteboard that covers most or all of the width of an entire wall, and from nearly floor to ceiling, in order to get students standing and moving, and make their ideas or planning visible to one another. Yeoman, (2018) in her study of similar "whiteboard walls" in a primary classroom, notes how these vertical writing surfaces can be used in a variety of surprising ways; moreover, and with implications for the sociomateriality of a learning space,

> In making thinking, doing, failing and recalibrating visible to others, these writable whitewalls played a crucial role in teaching these students to co-create a supportive learning environment—on their own and in the company of others. (p. 95)

While our IDEAS WALL shared similar uses and the goal of creating a supportive or collaborative learning environment, the effect of the *location* of material object—in our case, within a teacher's region, as I detail below—should not be underestimated or overlooked. Location, other objects and actors, assemblages, the materiality of space, all can disrupt the intended use or educational goal of any given material object.

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[15] SITTING CIRCLE addresses what Alexander et al. (1977) argue is the all-too-common sterile seating arrangements that people tend to avoid and where "nothing ever happens" (p. 858). Using an approximate shape of a circle, this pattern puts people at a comfortable angle to each other, and has a path and activity nearby to draw people in when desired (pp. 858-859).

Because the idea was to facilitate short instructional sessions or group discussion, the CAMPFIRE was akin to the traditional 1970s "carpet area" in primary school classrooms, a space "traditionally marked off as a place for shared activities which often involve the whole class and the teacher" (Comber & Wall, 2001, p. 91):

Figure 43. English Teacher, Archie, seated at board, addresses his English class (30 April 2015)

The metaphor of a campfire might not be the best fit, though, as one can glean from the image above, because the CAMPFIRE pattern was located at, and part of, what one would traditionally identify as the "front" of the classroom. This region consisted of a familiar material assemblage: teacher desk, computer, wall-mounted interactive projector, and whiteboard. The teacher desk, though, was actually a small round high table for a desktop computer only. (I had deliberately omitted installing a teacher chair so as not to encourage teachers to use this region as a home base, an example of using the material to influence activity and pedagogy in the space—an imposed pedagogy, of course.)

Instead, the CAMPFIRE pattern merely reinforced the notion of a *teacher region* that symbolises teacher authority and encourages transmissional knowledge through a teacher-centred spatial configuration. The durability of technologies like the blackboard and, today, interactive whiteboards or touch-screens, "reflects not simply their physical construction but also the persistence and stability of certain (power) relations" (McGregor, 2004c, p. 348); for example, the teacher's authority through the control of digital technologies used for teaching and learning. As Sørensen (2009) notes, a student who contradicts a statement on the board

contradicts what all the other students are seeing, in effect challenging the teacher's authority achieved through the officialness of that technology (p. 148).

The introduction of the CAMPFIRE also imposed upon users of the space a particular kind of pedagogical approach or educational experience, one slanted towards student-centred lessons. This student-centred approach was intended to be achieved through the flexibility of the spatial configuration in that the cube cushions could be easily moved or reconfigured to suit independent or small-group work; and, again, the learners could—hypothetically—*choose* to work in this region at different points throughout a lesson. The CAMPFIRE pattern is not a universal solution, nor was it necessarily the *best* solution in the context of the Media Hub; rather, it was merely a starting point for spatially configuring a room to reflect, what we presumed to be, effective approaches to contemporary learning space design (see chapter 2), and it was an adaptation to a specific and inherited built environment. Ultimately, a sociomaterial reading of space reveals that patterns, or indeed any spatial configuration, can always be altered, disrupted, or contested by social and material forces. In other words, design intentions, as I discussed in the previous chapter, will almost certainly be at odds with the actual use of the space.

What I often observed in both my own lessons and other teachers' lessons was that the CAMPFIRE was mostly used for one-to-many instruction—the teacher giving instructions to students, demonstrating or explaining a task, an unsurprising outcome given the familiar material assemblage of whiteboard-projector-teacher desk and computer. Still, this space was at least sometimes shared by teachers and students for discussion or informal work, or used by students for brief periods, thus building movement and choice into their classroom and learning experience. In the photograph below, for example, two students in my Year 10 Video & Animation class work on laptops for video editing (rather than use the desktop computers). The cube cushions are scattered, no longer in a semi-circle oriented towards the whiteboard assemblage, so the region has a new purpose and identity—at this moment— through both the material and social:

Figure 44. Students work on their laptops at the CAMPFIRE (6 November 2013).

While such use of the space could temporarily blur boundaries of homogeneous student-teacher regions and any related traditional power structures, the teacher's usual presence by the CAMPFIRE, because of the whiteboard-projector-teacher computer material assemblage, meant that this region nevertheless tended to be associated with a teacher region, one symbolising teacher power and authority. The teacher becomes part of that assemblage, of course, for any particular learning practice (in this case, teacher-centred instruction or lessons) is comprised of a pattern of relations of human and non-human components (Sørensen, 2009, p. 176).

The next image (Figure 45) captures how I observed the region to be typically used, with students gathered on the cube cushions for instruction at the start of, or during, a lesson, with the teacher the focal point:

Figure 45. IT Teacher Darren with Year 11 Video & Animation class (13 October 2014).

According to Sørensen (2009), students in such a spatial arrangement are "the same," creating a "one-to-many" relationship, which allows the teacher to broadcast teach, so this situation is the "performance of homogeneous regions separated by a boundary" (p. 148). Such a boundary is reinforced because the cube cushions are arranged more in rows than a semi-circle, and the students sit directly facing the teacher who stands at the "front" of the classroom, an echo of a rather typical classroom scene. Darren is leaning on the "teacher table," which holds the "teacher computer," itself connected to the interactive projector that is attached to the whiteboard. Because the students' gaze is directed towards this whiteboard-computer-desk arrangement, the teacher is aligned with all students' perceptions, an arrangement that "contribute[s] to performing the teacher's presence as an authority" in a region "saturated with authority" (Sørensen, 2009, p. 148). This regional pattern of relations could have implications for the kind of learning that can take place, or the kind of learning we intended to take place in the Media Hub; for example, we envisioned the IDEAS WALL being used mostly by students for brainstorming, and the CAMPFIRE's flexible seating arrangement being used for breakaway independent or group work. Barriers to such usage can arise because of the force of the whiteboard-computer-desk material assemblage, so students might be reluctant to enter what is usually seen as a teacher region; or teachers might discourage or inadvertently prevent access to the IDEAS WALL and CAMPFIRE patterns by simply using the entire region as a home base.

For Darren, an IT teacher, the CAMPFIRE pattern was successful in how it brought some variation to teaching practice and perhaps students' experience of learning:

> I have found that I use the [cube] cushions every lesson as it creates interludes during class and moments of emphasis—the students now know that when we go into a huddle it is to either be given a piece of information, to discuss and assess a project or task, or to be given a brief for a new task.

Interestingly, the metaphor of teacher *and* students "go[ing] into a huddle" implies a sense of collegiality or team spirit, what might be considered a more informal experience of learning; however, the CAMPFIRE's pedagogical purpose in this scenario, as Darren describes it, centres on a teacher-generated activity, which in itself is not a bad thing, of course, but during our discussions he did not mention scenarios of students *choosing* to use this zone for their own purposes.

"I love this workspace"

Given its mixture of a non-traditional layout with an iteration of a traditional material assemblage, and given the sociomaterial nature of space in general, it is unsurprising that the CAMPFIRE pattern (zone) took on different identities at different times. Below is a photograph taken during one of Archie's senior school English lessons. He and a student are at the CAMPFIRE zone, sharing the space for their own independent work or purposes:

Figure 46. English Teacher Archie and a student work at CAMPFIRE (March, 2014).

In my field note, I recorded how I had liked this active-looking scene, how both teacher and student had their materials spread out, almost mirroring each other; however, one could argue that the teacher is still in control of this zone, the part of the room that is most identifiable with teacher power; that is, the "front" of the classroom, where the technology, as assemblage, is controlled through the "teacher" computer (at left of photograph). From this position at the front, his back to the whiteboard, Archie is still able to survey the entire room, so his gaze could easily settle over all students. He is also physically preventing, inadvertently, the opportunity for students to use the IDEAS WALL behind him (assuming that the students were working on a task that might lend itself to such an activity).

After taking the photograph, I told Archie that I liked the look of this scene—the sharing of space, their materials spread around—and he replied: "I love this workspace!" I was struck by how he called it a "workspace," not just this *space* or this *area*. The intended purpose or activity—work—is established through his language, another example, perhaps, of an area space metaphor (Paechter, 2004a). He does not say *classroom* or *learning space* or even *area* to define the space and its purpose. Of course, by calling it a "workspace," he could be merely defining the scene here at the CAMPFIRE at that particular moment. Still, he seems to

be including himself and what he is doing right then in his role as teacher. One might argue, too, what with his papers and materials spread around him, that he is also claiming the area, reinforcing the region as the teacher's, which the student is allowed to visit only temporarily. His definition of the space as "workspace" could have been influenced by what the student was doing beside him, for she appears to be working, too. "Workspace" suggests a disciplined activity, the business end of being in school; for example, we might think of a teacher instructing a class to *get to work,* or to *work on* a math problem, or telling a distracted student to *get back to work.* The material assemblage here, at least at this moment, contributes to his assessment of the area as a workspace, which maybe only depends on the carpet and cube cushions giving the region shape. The fact that the identity or purpose of the CAMPFIRE can change, depending on who is there and what is happening, is a reminder of the mutability of space, how social actors and the material co-construct that space.

During a return (sabbatical) visit in April 2015, I observed another one of Archie's English lessons. I asked him again what he thought about the Media Hub now that it had been updated with parquet flooring, standing high tables arranged in PODS, red ergonomic lower chairs, and acoustic ceiling panels. He said that he really liked the space in its new iteration, specifically referring to the CAMPFIRE zone once again, and how it allowed him to bring students together, then move them out. He also approved of the different spaces (zones) in which to work *within* the larger space. He ended his reflection on the Media Hub by saying that it was a "lovely space to work," a return to his earlier view of what the CAMPFIRE facilitated, so the zone remained durable in this sense for Archie, although one could argue that that durability is contingent on it being associated with teacher power.

Mulcahy (2018), for example, recounts how one student in her study of a state secondary school preferred a learning experience at the whiteboard with just the teacher:

> In contrast with the well-established spatial and pedagogic assemblage of teacher 'in the front of a classroom', here the teacher is caught up in an emergent assemblage of student-teacher-portable whiteboard. (p. 25)

The Media Hub facilitated similar "emergent" assemblages, such as this next example of the variable nature of the CAMPFIRE zone, which comes from a formal observation I conducted of one of James' Year 10 English lessons in February, 2014. The lesson began with approximately fifteen minutes at the CAMPFIRE for teacher-led instruction and information.

Then the students broke away to work individually on the desktop computers (a writing task), and they chose their own location. Once James' class broke away for their individual work, the following informal scene of student-teacher interaction at the CAMPFIRE occurred:

Figure 47. James chats with student at CAMPFIRE (11 Feb 2014).

James was having a one-to-one discussion with a student at the front wall (whiteboard) while seated on cube cushions—he with papers on his knees, slightly reclining against the board, his legs and feet casually up on another cube; the student (female) seated immediately beside and perpendicular to him, leaning forward. In this scene, the cube cushions, as part of the CAMPFIRE pattern, have become—and facilitate—an informal meeting space where teacher and student are physically on the same level, meeting more as equals in this respect, for they are not at an official, recognisably familiar, teacher desk. For comparison, in a traditional classroom, a student might seek help by going to the teacher's desk, an area infused with the authority and power of the teacher. Such regional patterns of relations, as created by the spatial configuration, reinforce the traditional power imbalance of the classroom (Sørensen, 2009).

At the same time, one could read this image of James, leaning back against the wall, his feet up on a cube, in a completely different way. Cohen et al. (2011) suggest that researchers should think of images as telling a story, a discourse, so a single objective reality does not exist (p. 529). James' body language suggests that he is at ease, at home in the region; in contrast, the student looks subservient, like a visitor who has no power, for she sits erect, leaning forward, her arms and hands drawn across her body and placed meekly in her lap. These contrasting interpretations are a reminder, once again, that space is relational, subject to interpretation, open, and always being constructed. The CAMPFIRE pattern (assemblage),

depending on the activity there and one's reading of the space, either counters or reinforces (or perhaps both counters *and* reinforces simultaneously) a power imbalance that is present in this region because of the whiteboard-computer-teacher desk assemblage.

Such contrasting interpretations, it can be argued, were only possible because of the digital camera itself, the technology: "In its taken-for-granted status as co-researcher, the digital camera acts as a visual documenter and archive" (Thompson & Adams, 2013, p. 345). Calling it a "co-researcher" recalls Adams and Thompson's (2011) concept of "interviewing" the object, discussed earlier, for in both cases language usage foregrounds the object, elevates its status (to that of humans) within this sociomaterial assemblage of researcher and technological object (co-researcher)—an assemblage that is, itself, investigating another assemblage of objects and humans within the pattern language of the space. Thompson and Adams (2013) also argue:

> The human-researcher-with-digital-camera is able to generate a digitized, pictorial show, whose framings – and sometimes croppings or magnifications – may reveal previously unnoticed aspects of a world. (p. 346)

Not only unnoticed aspects but also the *multiple* aspects or interpretations of a world, which in the case of the photo above includes the two simultaneous interpretations or simultaneous happenings already discussed: 1) the informal spatial arrangement (CAMPFIRE pattern) that appears to de-emphasize a teacher region, what with the teacher-desk-chair assemblage gone; and 2) the durability of a teacher region, albeit in a new guise of informality that is still anchored to the whiteboard-projector-computer assemblage, at the "front" of the classroom. The sociomaterial interrogation of the space, of the pattern, is aided by the digital camera's co-researcher ability to document and archive. Whatever assemblage that the researcher and camera (co-researcher) can frame or magnify may not exist beyond this moment and particular spatial configuration, so it is crucial to remember that the digital camera, as co-researcher, captures a moment that can have the illusion of permanence, an illusion of stability, like the eternal-present of any particularly moment in a novel. More moments need to be captured if one is to document the instability and changing nature of assemblages.

Despite the informality achieved through the cube cushions and CAMPFIRE pattern, a sociomaterial interrogation of the pattern suggests that the lack of a conventional teacher desk and chair might be the only thing preventing the scene in the photo above from looking

absolutely traditional in its power imbalance. Not surprisingly, some teachers lamented the absence of a teacher desk. Bruce, a maths teacher, said that he liked the overall layout of the Media Hub (26 May 2014), praising its spaciousness, the amount of room for movement or personal space; however, he added that the one thing needed was another little table at the front (by the whiteboard and desktop computer) for his "stuff," a comment similar to that made by another maths teacher, Tony, who, as we will see in the next section, took a different approach to solving the lack of a teacher desk at the "front" of the classroom.

From student table to Tony's teacher table: a *translation*

This vignette recounts a specific incident (12 Dec 2013) early in the evolution of the Media Hub when I happened upon an interesting scene in the foyer one morning just outside the Media Hub. Tony, a maths teacher, had booked the Media Hub for his double maths lesson periods 1-2. It was 8:40, ten minutes into the start of the first lesson of the day. Tony announced, to no one in particular but perhaps for my benefit because I was nearby (he was aware that I had created the Media Hub), "I need a table," as he was flipping over a round table from the foyer, which he then carried into the Media Hub:

Figure 48. Tony's teacher table in Media Hub entrance (12 December 2013).

The table's purpose—its identity, even—in the foyer was essentially as a "student" table. It was also the first piece of furniture that I had put in that liminal space to encourage the extension of learning spaces beyond the bordering five English classrooms and the Media Hub.

Because Tony brought the table into the Media Hub and used it as his workspace, however, the object's identity and purpose went from being a "student" table to "teacher" table. With a

teacher seated there, especially at the entrance to the room, this assemblage could signal a powerful message about whose space one was entering. The materiality of an object, then, can change from one context to the next, from one space to the next, even though the object's home in the previous space (foyer) bounded its new home merely a few meters away (Media Hub). Mlekuz (2014) argues that when

> People […] carry objects, moving them into new positional and relational contexts with other things, […] they create new material encounters and new material traces through movement. (p. 5)

In addition to creating new material encounters, power also resides in a person's ability to control such material resources, to move furniture from room to room, for example. Paechter (2004b) argues:

> Power only operates when these resources are effectively mobilized: someone does not have power just because they have these (or other) resources, but only through their effective mobilization of what resources they have. (p. 468)

In Tony's case, such power was expressed through the act of being able to carry in a fairly heavy material object, an act predicated on a sort of permission that is implied by his role and authority as teacher. A student, of course, would have to seek permission from a teacher to carry out a similar act.

I passed by the Media Hub shortly after Tony's double maths lesson had ended, and observed that the space was now locked, the lights off. Tony had left the table there in the middle of the entrance, rather than return it to the foyer, even though he was not going to teach again in the space for the foreseeable future (he was not timetabled in the Media Hub). In spite of my annoyance that he had not returned the table to the foyer—a feeling indicating my bias for the intended appearance and use of the space—the table's presence led to some fortuitous observations in the following periods and days. One example involved an English teacher, Zuzanna, for she started using the table in a similar manner to Tony, but did not question its presence (I later learned):

Figure 49. Zuzanna, English teacher, sits on Tony's table at entrance (December, 2013).

The pose is casual, because she has chosen to sit on the low table, although the only other option would have been to use the cube cushions that are against the wall, at right. Like Tony, Zuzanna has her laptop and materials spread on the table, so this material assemblage can be clearly identified as the teacher's region, at the same time that it disrupts the ENTRANCE TRANSTION pattern, somewhat like the laptop trolley once did. Of course, the table is also serving a common practical purpose, for there was no "teacher table" at the "front" for a teacher's materials.

The force of the material object—its mere existence in the space—means that its position might not be questioned at all, possibly a symptom of the space being shared by different teachers from different departments, rather than being *owned* by one teacher. Later that day, however, I observed that the table had found its way back to the foyer, which was Carol's doing, I learned, for she saw earlier that it was missing from the foyer, and had asked me why (I explained to her how Tony had moved it into the Media Hub). She said that she had instructed some Year 13 students to move the table back to the foyer, a small but still interesting contestation of space, one that drew on student labour. To remind, Carol (English teacher) was a vocal opponent of the maths department's frequent use of the Media Hub, so her act of having the table removed from the Media Hub can be seen as another way to contest ownership of the space.

And back to student table

Later that morning, I observed another English teacher, Archie, in the Media Hub with his Year 11 English class. Now, two *students* were using "Tony's table," a reversion to the object's original purpose in the foyer:
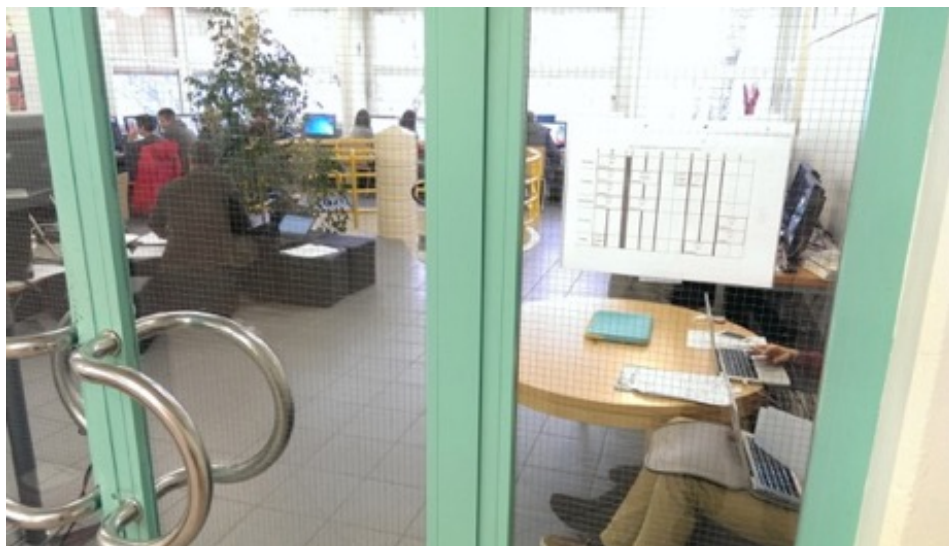
Figure 50. Two students sit at Tony's table, view from foyer (December, 2013).

In this scene, the CAMPFIRE cushions have migrated to the centre of the room, and now serve as a table for Archie's materials. He is occupying, working in, a non-traditional teacher space, a potential shift from the traditional regional pattern of relations in a classroom; however, even though he has his back to the two students who are sitting informally—yet working—by the entrance, Archie is still in a panoptic position. Because of the horseshoe configuration of the desktop computers, he can see the screens of all the students—except for the students by the entrance who, in addition to keeping their screens unseen by the teacher, can presumably be more comfortable on the cube cushions by sitting with their backs resting against the wall.

A sociomaterial perspective recognises, here, that the table represented different intentions, functions, even identities, bound up in an assemblage of object and human; and that the table exerted a particular material force depending on where it was moved to and who used it: from teacher workspace and strategic observation point to teacher "chair" (Zuzanna sitting on it as she works) to informal student workspace—a "detour" or "translation" (Latour, 2004, p. 37). These shifting uses, links, and identities capture the essence of Latour's (2004) notion of translation, which he describes as "displacement, drift, invention, mediation, the creation of a link that did not exist before and that to some degree modifies two elements or agents" (p. 32). One can see, in the example of *Tony's table*, new links between object and human actors being formed then broken and then re-formed, a process that likely occurred in other ways that I would not have observed. Just as the table's literal location in space drifted, so too did its function and meaning. In the context of the pattern language approach to the ordering of space here in the Media Hub, translation fits within the conceptual framework of a

sociomaterial interrogation of the design patterns in the Media Hub—a displacement or drift (from the intended use of the pattern and space). Pattern language theory itself embraces adaptation, evolution, a kind of *drift* that might occur when new patterns arise, or when different patterns combine or *link* in a way that did not exist before, to echo Latour's (2004) language.

One goal of the CAMPFIRE pattern was an attempt to counter (or eliminate almost) the traditional front of the classroom that is usually established through the teacher-desk-chair-whiteboard assemblage, a fixed goal that was disrupted by Tony's table. Of course, in this concept of translation, "Neither subject nor object (nor their goals) is fixed" (Latour, 2004, p. 33). What was before just an object in the hallway (albeit a kind of assemblage there in that it was a "student" desk in a public space within the school building) is translated; it *drifts* into a teacher desk because the table links in new ways with different human actors for different purposes. The table, like most objects of education, had an *intended* purpose (a fixed goal) in the mind of each human actor, yet it had unintended effects on the purpose and use of space, and the human relations within that space. The drifting meaning (and location) of a mundane and taken-for-granted object like this table highlights the changing nature of space, how it is always being contested and constructed—or translated. One is also reminded of the possibilities of space, the unintended consequences that, here, arose from a kind of resistance to an imposed pedagogy that the spatial configuration, in some respects, forced teachers and students to accept or adapt to.

Patterns and shifting materiality: CORNER SPOTS

In addition to the CAMPFIRE, another significant pattern in the Media Hub was what I called the CORNER SPOTS pattern, which was also meant to challenge the establishment of a traditional teacher region, and provide two separate zones of semi-privacy. Located by the windows, the two versions of the pattern were termed COSY SITTING CORNER and MEETING CORNER, denoting their purposes. Both patterns were comprised of smaller patterns, Alexander et al.'s (1977) LIGHT ON TWO SIDES OF EVERY ROOM, VIEW OF NATURE, and WINDOW SPOT. The CORNER SPOTS pattern, in general, is a variant of Alexander et al.'s (1977) ALCOVE[17] pattern, which represents an effective design solution to the following problem:

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[17] See also pp. 225, 281.

> No homogeneous room, of homogeneous height, can serve a group of people well. To give a group a chance to be together, as a group, a room must also give them the chance to be alone, in one's and two's in the same space. (Alexander et al., 1977, p. 829)

An alcove pattern therefore solves a conflict in the built environment: the opposing and simultaneous needs of seclusion and community (p. 831). Applied to a classroom, this would be a zone of semi-privacy where a student could work independently or in a small group, or even meet with a teacher.

I believed that the CORNER SPOTS would serve several important functions. They would (1) represent learning zones within the larger learning space, a common recommendation in the literature on learning space design (Van Note Chism, 2006, Wulsin, 2013; Walden, 2014); (2) provide a choice for both students and teachers to work independently or to collaborate in small groups or have a discussion, which would (3) build in freedom of movement for students during lessons and (4) de-emphasize the notion of a "front" of the classroom that reinforces the boundary between teacher and student in terms of both region and power; and, finally, (5) the CORNER SPOT pattern would provide a phenomenological benefit by creating zones that provided comfort or retreat, perhaps even contributing to well-being given that the CORNER SPOTS interwove the patterns WINDOW SPOT and VIEW OF NATURE. With implications for students' learning experience, for example, a view of nature has been shown to correlate with improved student learning outcomes for elementary students (Barrett et al., 2015; Tanner, 2009).

The CORNER SPOTS pattern was also meant to facilitate the kind of "effective interactions of small groups of people within communal spaces" that, for example, Kearns (Horn, 2015, *What are the opportunities* section), an architect, promotes in his Intrinsic Schools programme; in contrast, undifferentiated classroom configurations, or overcrowding of desks in rows, can hinder such small-group interactions. CORNER SPOTS would represent zones of semi-privacy within the larger communal classroom space; however, as I will show later in this chapter, using CORNER SPOTS to solve this conflict between privacy and community cannot fully anticipate the unpredictability and mutability of space. Through the interaction of human and non-human forces, the durability or efficacy of the CORNER SPOTS pattern would certainly be contested.

COSY SITTING CORNER pattern

The first iteration of the COSY SITTING CORNER pattern (Figure 51) was comprised of two comfortable chairs, a plant, cube cushion, and plenty of natural light—a rather simple yet pleasing area. It was intended to be a zone for independent learning, temporary stays, or a semi-private retreat that drew on smaller component patterns: VIEW OF NATURE, WINDOW SPOT, and LIGHT ON TWO SIDES OF EVERY ROOM (Alexander et al., 1977).

Figure 51. COSY SITTING CORNER, upstairs Media Hub (21 May 2014).

Rather than needing to rearrange furniture to achieve what is commonly understood to be a flexible learning space, flexibility was *built into* the Media Hub through its different patterns and learning zones, such as the COSY SITTING CORNER, which would facilitate, even encourage, acceptable student movement; that is, students would not need teacher permission to go there, or be reprimanded for going there. Instead of being immobilised in a chair in front of one computer, students could *choose* to move to the corner whenever they wanted, perhaps to work independently on their laptop, or to collaborate with another student, or even to have a discussion with a teacher, such as could have been the case with the maths teacher in this next image:
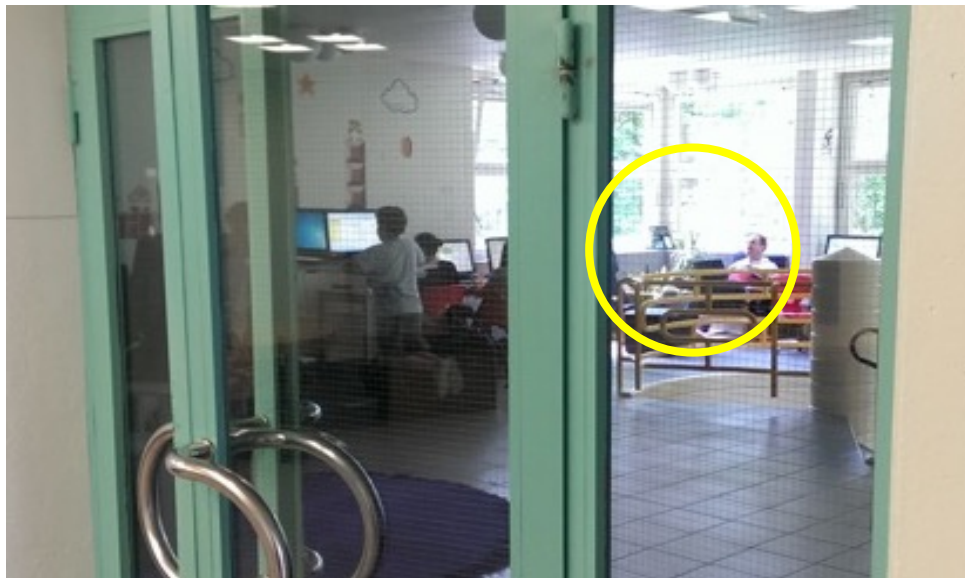
Figure 52. Maths teacher sits in COSY SITTING CORNER; view from foyer (26 May 2014).

His positioning in the corner is likely temporary. Although he is visiting a zone that is arguably in a student region (if defined in contrast to the CAMPFIRE region which came to represent a traditional teacher region), the fact that both students and teachers could choose to sit in this CORNER SPOT had the potential to blur boundaries that establish and reinforce such regional patterns of relations.

The new head of English, James, spoke favourably of the COSY SITTING CORNER, reporting that he used it to interact with students:

> James: Sometimes with smaller groups I might go, I might go and sit, if everyone kind of having a thinking slot, I might go and sit in the back corner—
> Me: Yeah.
> James —and, and they can, they come there, rather than all of them always going to the front, so there's a sense that we can—you have the flexibility to, to move around.

In addition to noting the built-in flexibility that I mentioned above, James speaks of both a "front," which could only be associated with the entrance and presentation area, and a "back corner." His own pedagogical use of the corner is temporary or occasional, suggesting that this zone of semi-privacy has no permanent identity as a homogeneous teacher or student region. To some extent, then, the COSY SITTING CORNER pattern could have altered social relations, diminishing the force of regional patterns of relations (Sorensen, 2009) associated with the "front" of the classroom as a teacher region.

From COSY SITTING CORNER to slacker region

During my two-year sabbatical, however, the COSY SITTING CORNER (its material components) disappeared, to be replaced by the *reintroduction* of low desks with a handful of desktop computers. This reversion represented how the IT department had taken further ownership of the space, and symbolised how my role as project leader—and the control of the space that went along with that position—diminished significantly. One could argue, though, that my absence allowed for increased empowerment of the IT department, a benefit of a PAR project. The reversal of much of my work and my intentions for the spatial configuration to prevent the Media Hub from becoming an exclusive IT department space, in both design and use, highlights how power can easily shift and then be expressed in new ways through the materiality of a space. A clear reason for the corner's reversion was never explained to me by Craig, especially as it might have related to students' experience of learning or sense of place (the focus of one of my research questions, to remind). Making changes to the space based on student feedback, of course, would have better represented the PAR approach of this project.

The *former* COSY SITTING CORNER also represented the farthest point from the "front" of the classroom, the teacher region by the entrance that included a traditional material assemblage that became enmeshed in the CAMPFIRE pattern. If there is a teacher region in a classroom, one could expect some sort of archetypal student challenge to this authority, a challenge that can be expressed within and through a defined spatial configuration. Accepting the concept of regional patterns of relations, one understands that clear boundaries will reinforce a student region; and within that larger student region one might find smaller regional patterns of relations, such as a single back row of desks in a classroom, representing the farthest point from the teacher-whiteboard assemblage at the "front" of the room.

While I was observing an IT lesson during one of my sabbatical visits to the school, in 2015, Darren told me that the area in the left-corner window, formerly the COSY SITTING CORNER, and extending a few computers to the right into the middle-window area, tended to attract "the slackers," because it was "far enough away, a little hidden...one place you can hide your screen." With the computers once again in a perimeter horseshoe configuration, however, a student could not really hide her screen, so I took my colleague's comment to mean that this area was far from the teacher zone by the entrance, and was in some way blocked off by the stairwell, making it awkward to visit and see the screens up close:

Figure 53. Upstairs left corner of Media Hub; former COSY SITTING CORNER (5 July 2016).

The railing and stairwell served as a barrier, perhaps giving it a stronger sense of privacy or retreat, but also making the corner harder for other students or the teacher to easily access or visit; the narrow entrance and passageway created between the chairs and railing likely further contributed to this sense of a distinct, semi-private zone:

Figure 54. Year 11 Video & Animation class, view of "slacker region" (13 October 2014).

Moreover, student backpacks would often be on the floor just behind the chairs. In Figure 53 above, someone had also temporarily added a bench seat from the CAMPFIRE zone, further clogging up the area. One could imagine some implications for the experience of learning here, for the cluttered and cramped corner could prevent a teacher from easily circulating for the purpose of helping students (or for closely *observing* them, of course).

At the same time, this region of the classroom, even after the disappearance of the COSY SITTING CORNER, likely still attracted students because of patterns like LIGHT ON TWO SIDES OF EVERY ROOM, VIEW OF NATURE, and simply because there were low seats with chair backs—some students did not enjoy sitting on the high stools (or standing) by the high tables for extended periods; however, two other teachers also felt that this region attracted a certain *kind* of student. During an informal visit to Joanna's English lesson in the Media Hub (May 2015), I shared with her this interpretation of the corner region, which we were standing by at the time. She agreed that the area did attract, as Darren called them, "slackers," likely because it was the farthest point from the "front" of the room, she hypothesised. This positioning of students as slackers, though, is also an example of how students are expected to act in a particular manner.

In my interview with James, I put to him our colleagues' perception of the slacker region, and asked if he had witnessed the same phenomenon, to which he replied:

> A little bit, a little bit, and the, and the good thing with that is that if they do sit on the back, the—you can see the screens, the screens are facing you—

His response is a reminder of the surveillance and control that many teachers use to counteract students' attempts to assert power or subvert teacher power. He, too, uses language that reinforces the existence of homogeneous regions, calling this area "the back." James' reflections on the idea of a slacker region ended on a surprising metaphor:

> J: ...it's very easy to be anywhere in the room I can see—
> T: Yes.
> J: —what they're doing, so there's a very easy way of just, of knowing if they're on task or not, um, so yeah, I think, yeah, there, there is that sense of, I think it's that back of the room, isn't it, it's that sort of back seat, barracuda sort of thing.

His tone was playful, but comparing students who sit in the back row to a ferocious, predatory fish implies that this kind of student has a certain power—if not to intimidate others, then at least to challenge authority. In other words, the barracuda students (who are also the *slacker region* students) appeared to be using the spatial configuration to contest teacher power.

Simple material changes to the configuration of desks and chairs had three implications for learning and social relations in the Media Hub. First, the changes altered social relations in

that some students—according to teachers—used this space to contest teacher power; however, we might wonder how the spatial configuration itself might have shaped their learner identity, at least in the minds of some teachers. Students could have merely wanted to sit in a luminous area with low chairs and a view of nature (via patterns LIGHT ON TWO SIDES OF EVERY ROOM and VIEW OF NATURE.) Second, the changes eliminated a learning zone that could be accessed and used by *all* students for brief periods of independent or collaborative work. Third, the loss of the COSY CORNER SPOT potentially altered students' experience of learning by removing a comfortable learning zone, limiting them to sitting in front of individual desktop computers.

Also, the IT department, by reverting the spatial configuration to the perimeter horseshoe of desktops, further reclaimed the space, for the spatial configuration suggested the intended use of the space. The COSY SITTING CORNER was meant to disrupt traditional regions and any associated power structures; it also was meant to serve as a distinct learning zone offering comfort and semi-privacy. This intended design, though, was challenged by students' actions, teachers' positioning of students as "slackers," and the IT department's assertion of power over the space in my absence. Overall, these implications demonstrate the value of a sociomaterial reading of a pattern language approach to learning space design, highlighting that the material and social assemble in unpredictable ways in the ongoing construction of space.

MEETING CORNER pattern

What follows is a chronological look at the demise of the other key pattern upstairs, the MEETING CORNER, which was meant to function as a distinct learning zone for SMALL GROUP WORK, independent study, or teacher-student discussion. For context, below is a photograph of the Media Hub, pre-transformation, in 2012, just after the primary school library had moved out. The tables by the windows had been in this configuration for the primary school's library, a spatial configuration based on computer cabling, which one can see as the white band midway between the window and floor:

Figure 55. Upstairs Media Hub, pre-transformation, view from entrance (July, 2012).

Next is an example of the perimeter horseshoe configuration that we had before the introduction of the standing tables, and the PODS and CORNER SPOTS patterns. This layout, again, was dictated by the computer cabling and simply an update of the previous, inherited configuration:

Figure 56. Upstairs Media Hub, horseshoe configuration (12 February 2014).

This image reveals how the spatial configuration and materiality of the right corner (later the MEETING CORNER) likely only allowed for one kind of activity or approach to learning: desktop computing. In order to make the corner a learning zone potentially available to all—a place to choose to work independently or in small groups—the MEETING CORNER spatial configuration was to consist of a high table and bar stools. This initial, rather basic setup (Figure 50) was because of limited funding, but I also needed to establish the pattern even

though the corner was eventually meant to have a larger table with four chairs once more funding came through.

Early on in the Media Hub's development (October, 2013) and before creating the two CORNER SPOTS upstairs, I had asked one of my English students in Year 10, who I knew liked drawing, to sketch out some of my rough ideas for the upstairs CORNER SPOTS so that I might share a visual representation of the proposed design with colleagues and students:
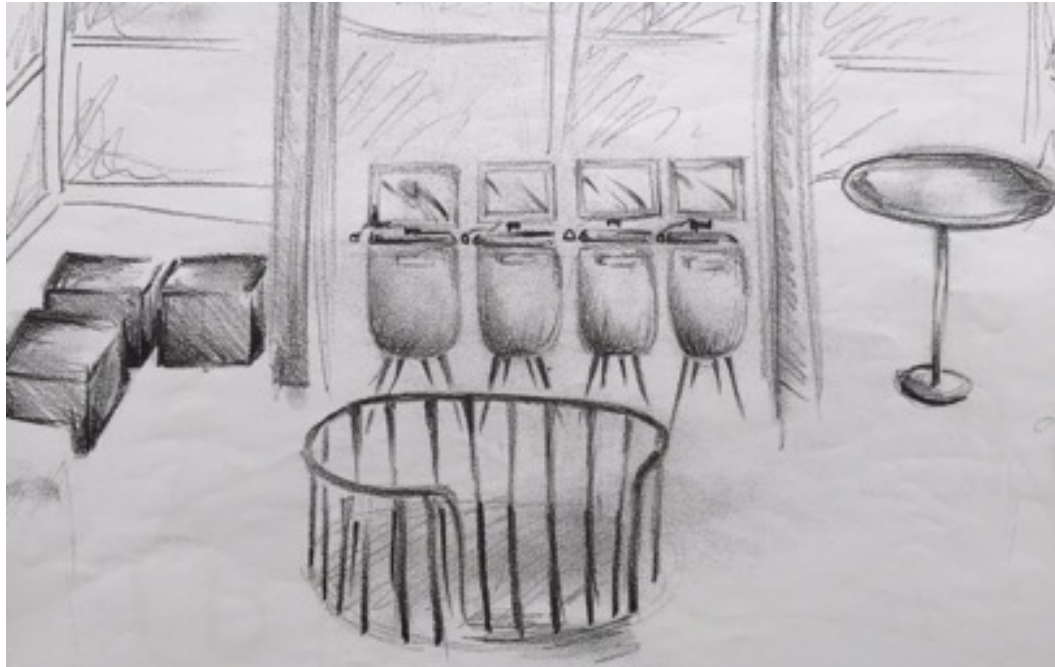
Figure 57. Student sketch for upstairs Media Hub (October, 2013).

Immediately before a group interview with three of my students from the Year 11 Video & Animation course, I gave them a copy of this sketch to discuss and annotate, a methodological approach adapted from Pink's (2007) photograph elicitation. As part of the interview, we discussed the design and some of their suggestions, and their annotations provided further data points. Of special importance in the annotated sketch below, in terms of students' experience of learning, is the high table CORNER SPOT at right, which represented my intended MEETING CORNER:
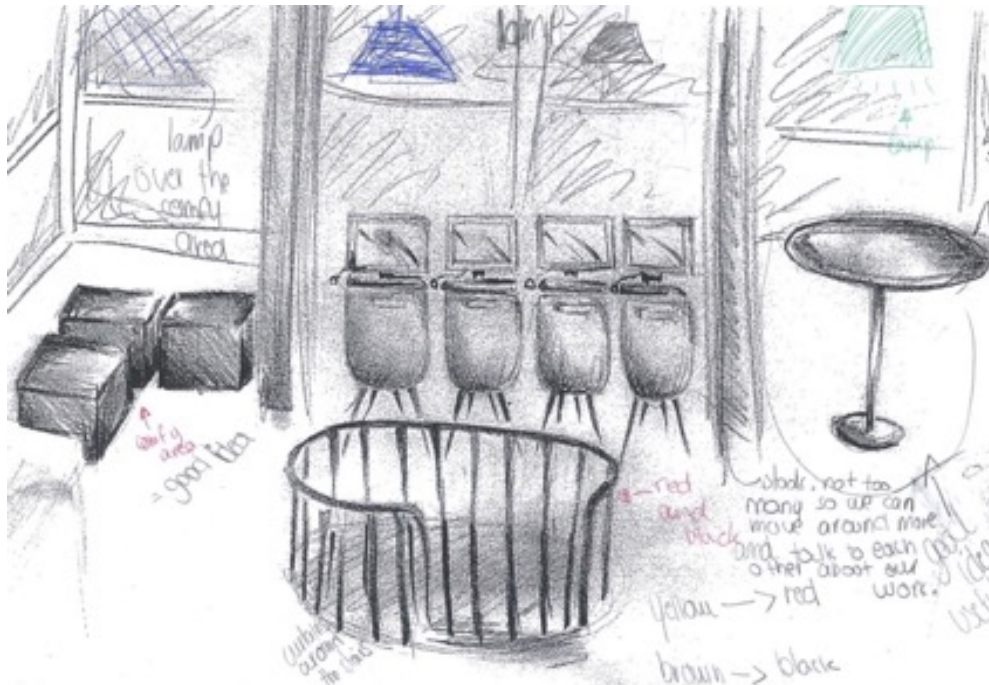
Figure 58. Students' annotated sketch for upstairs Media Hub (27 February 2014).

One student has written that the high table in the corner was a "good idea" and "useful," while another has suggested that stools should go around the table, but "not too many so we can move around more and talk to each other about our work" (right-hand side of image). Movement is couched in positive terms and associated not with idleness and chit-chat but with productivity because they are able to "talk to each other about [their] work." The two CORNER SPOTS—that I envisioned would represent distinct learning zones—could provide a choice of where and how to work, inviting movement, and perhaps contribute to a feeling of spaciousness. Of further interest is the addition of lamps over the working area, so the students appear intuitively drawn to the pattern POOLS OF LIGHT, a pattern I included in the *downstairs* CORNER SPOT, which I discuss near the end of this chapter.

The next image is an early iteration of the MEETING CORNER, with a student from my Year 10 Video & Animation course doing some video editing on her laptop. Although simple, it appeared to successfully facilitate its intended use, I often observed:

Figure 59. Student works on her laptop at MEETING CORNER (23 May 2014).

Limited funding meant that I could not develop the pattern any further than this iteration before going on sabbatical six weeks later. By the start of the next academic year (October 2014), when I returned for a visit during my sabbatical, the CORNER SPOT pattern had started to dissolve because the low table (at right) had been removed, diminishing the boundaries that helped define the corner. Another reason, I hypothesised, was that a larger high table and more bar stools were never added. The zone started to look a bit lifeless, barren, and too open:

Figure 60. The MEETING CORNER begins to dissolve (27 October 2014).

By the time of my second sabbatical visit to the Media Hub four months later (February 2015), the MEETING CORNER had entirely disappeared, just as the COSY SITTING CORNER in the opposite window corner did. Now, the MEETING CORNER was occupied by the portable flat-screen television (with *teacher*-laptop docking station) that we had originally put downstairs:

Figure 61. Portable television replaces MEETING CORNER table (7 February 2015).

In what I viewed as a failed iteration of the CORNER SPOT pattern, no longer was there meaningful use of, or even access to, what could be understood as a distinct learning zone. Previously, this zone represented a place to work independently or in small groups, with strengthening patterns LIGHT ON TWO SIDES OF EVERY ROOM and VIEW OF NATURE. Most frustrating for me was that I had observed that the television rarely—if ever—got used by anyone, further evidenced by its constant migration during the four years of the Media Hub's development, from spot to spot, both upstairs and downstairs:

Figure 62. TV migration: clockwise from top-left: downstairs by film ALCOVE (May 2015); upstairs, former COSY SITTING CORNER (2015); downstairs CORNER SPOT near iMacs (2015); downstairs by film ALCOVE, its original position (2013)

The force of this material object's presence is reminiscent of the laptop trolley that temporarily dominated the entrance to the Media Hub. Here, as well, a technological object dominates the space, and users (including me) never really knew how or why it appeared in

each spot. Even though the television is on wheels, just like the laptop trolley, it still tends to remain fixed in whichever place it has been moved, suggesting that material objects can have a symbolic weight and force that immobilizes them. Their presence and even monetary value can give them further symbolic importance, or force.

Unlike a chair or cube cushion that a student would regularly use and be allowed to move, the TV is associated with the teacher (school), so it stays put. Students tend not to touch such valuable objects. Also, in a shared classroom like the Media Hub, teachers other than the one who actually put the TV there might not question the validity and purpose of the TV's presence in this corner, so the material object evokes a sense of what Hume (1739/1992) identified as an *existence bias*. Broadly expanding on Hume's theory of moral judgement, Eidelman, S., Crandall, C., and Pattershall, J. (2009) argue that "In all matters there seems to be a general proclivity among people to ascribe worth, value, and goodness to extant states of the world; they assume what is must also be good" (p. 765). The television and docking station, then, would have value being in the corner simply because it was there at all, and users would see it as a good use of space. The television assemblage was placed in the MEETING CORNER by an IT teacher, of course, underpinning how the human and non-human intertwine in the construction of space, and also how my own power as project leader was transferred to other IT teachers during my sabbatical. This transference of power, although a frustration for me given my desire for the space to function well or as intended, reinforces how a PAR approach has a strong democratising function.

When the TV eventually returned downstairs, my follow-up observations showed that the MEETING CORNER did not return to its previous iteration. During the last of my return visits (July, 2016) to the Media Hub during my sabbatical, the corner had apparently become barren:

Figure 63. A barren MEETING CORNER (5 July 2016).

With both CORNER SPOTS gone, the classroom had a more utilitarian feel. Desktop computing appeared to be the sole learning activity that the spatial configuration and materiality of the space suggested or encouraged. Although the CORNER SPOTS had disappeared, another variant of Alexander et al.'s (1977) ALCOVES pattern that I had embedded in the Media Hub's spatial configuration—PODS—better retained its shape and purpose; however, the PODS (see chapter 8) and other regions in the Media Hub were sometimes used by teachers to discipline or control students, an expression of power that was difficult for students to contest. The original function of the patterns became subservient to teachers' intentions and how they re-purposed the space, still another example of how the actual use of a space can be at odds with its design intentions, and how students have little power in a classroom.

Space and discipline

In the context of the ongoing negotiation of power in the Media Hub, Foucault's (1977/1995) *Discipline and Punish* provides insight into how institutional power is expressed through the material arrangement of educational spaces. Teachers can be understood as agents or symbols of an institutional power that is often panoptic and resistant to contestation. Central to Foucault's (1977/1995) theory of how space is organized in relation to the disciplining of bodies is the idea of *partitioning*. He writes, "Each individual has his own place; and each place its individual" (p. 143); the aim is to avoid group distribution. "Disciplinary space tends to be divided into as many sections as there are bodies or elements to be distributed" in order to eliminate "the uncontrolled disappearance of individuals, their diffuse circulation," and

> to establish presences and absences, to know where and how to locate individuals, to
> set up useful communications, to interrupt others, to be able at each moment to

supervise the conduct of each individual, to assess it, to judge it, to calculate its qualities or merits. (p. 143)

The first iteration of the Media Hub—the perimeter horseshoe configuration—partitioned students in a sense. Each had her own place represented by the desktop computer, and there were no designated places for group or independent work. Certainly, students could be immediately located at all times given that they were tethered to the desktop computers rather than working on a laptop downstairs. With the introduction of the various patterns and learning zones across both floors of the space, however, students now had places where they could choose to work (or not) without constant supervision or judgment.

The control of students includes controlling access to spaces in a school. Timetables, for example, dictate where and when people should be. A teacher (acting like the metonymic school, as in "*the* school," similar to how "Downing Street" represents the prime minister) often controls student access to school spaces. Access to the Media Hub, say for independent study, usually required teacher permission, or at least teacher assistance to unlock the door (a key as symbol of power). This simple act of unlocking a door has sociomaterial importance, for access to a space can also mean access to learning, or the kind of learning that can occur—and when it occurs—in a particular space; for example, a teacher could discriminate against a student that he or she believes lacks the maturity or self-discipline to work in the Media Hub independently, such as a student associated with the *slacker region*. Or a preferred and motivating learning space cannot be a learning space for a particular student one day simply because a teacher is not around to unlock a door. More familiar, perhaps, is the control that teachers usually have over where and when students move *within* a classroom.

In addition to teachers controlling access to a learning space, or teachers controlling student movement and actions within that space, equal attention must be given to how the spatial configuration of a room itself can contribute to this control, how it can inhibit student agency—how and when and why students move; examples include: a teacher's classroom rules; her pedagogical activities, likely dictated in some way by the spatial configuration, such as desks in rows facing a teacher at the front, reflecting a teacher-centred pedagogy; or a dense and overcrowded classroom, which can make movement difficult or even impossible. Finally, there is the panoptic institutional power of schools, which is certainly amplified today with the addition of security cameras in school hallways, an overt visual reminder of

the panoptic gaze that tends to be internalised, eventually needing no visual focal point. As Foucault (1977/1995) argues,

> In discipline, it is the subjects who have to be seen. Their visibility assures the hold of the power that is exercised over them. It is the fact of being constantly seen, of being able always to be seen, that maintains the disciplined individual in his subjection. (p. 18).

James considered how deviation from norms of student behaviour and productivity could be a result of the space itself, particularly downstairs in the Media Hub where students could not be "constantly seen" by a teacher:

> I think there's a danger that if you let them use the space—you know, if you get too laissez-faire and let them use the space in a kind of, you know, <changes voice for sarcastic emphasis> "enjoy it, you're young adults, go for it!" <emphasis ends> invariably they can go for it in, in a fairly negative way, have a sit, slump, and I worry about the, the amount of progress and the amount of focus that actually is, is being shown.

Even the act of sitting ("have a sit") is presented negatively, for it would involve a teenager's classic physicalizing of contesting power in the classroom: slumped posture. James' worry about lack of progress and focus in this downstairs region of the Media Hub contrasts with a number of students' own perceptions of how they best work (or best *like* to work) independently, which I will examine in the next chapter. The essence of James' reflection here, though, gets at the common notion that students are not to be trusted to work without supervision, and also highlights how, ultimately, a teacher can control student agency by "[letting] them use the space." Students can contest this teacher control, perhaps with something like a slacker region, but this contestation highlights how their actions and power tend to be reactive. With its various learning zones across two floors, the Media Hub potentially offered students greater autonomy and choice—the choice of where to work, the choice to get up and move about, perhaps to another learning zone to suit the learning activity, or the choice to avoid being "constantly seen."

Later in our interview, James added:

> There are, I think, some students who can, some students we can expect to manage their, their, their work effectively and be in control and have the discipline to do that.

Here, control and discipline are related to students turning institutional control and discipline upon themselves—an internalization of panoptic power. It is worth emphasising, too, the value of James as an informant because of the "social locations" (Hammersley & Atkinson, 2007, p. 180) that he has in his role as department head. His pedagogical views carry weight, for he can influence other teachers, curricula, and pedagogy in ways that regular department teachers cannot. Perhaps this position of authority also influences how he interpreted the ways in which *other* teachers used the space; for example, James reported seeing lessons where "there's a lot of chat going on," and "a lot of standing around and having a look at stuff." He continued:

> —and you get a vibe there's a little bit too much of a relaxed feeling here, that, that, that the control, the order is in the wrong—is, is, is piled more, more towards the students than to the teacher.

Saying that "the order is wrong" implies that only teachers should have power in a classroom, which is emphasised through the "piled" metaphor, suggesting that the loss of power is immense. The relaxed feeling that he observed was, in fact, an atmosphere that a number of students reported in a positive light, an atmosphere they sought and preferred in order to be productive and comfortable.

"It can get a bit wild"

As I detail in the next chapter, this productivity, however, was probably better suited to individual work rather than lessons that spread over both floors, which the following ten minutes of a Year 10 Video & Animation lesson observation indicated:

Media Hub Lesson Observation:

Darren's Year 10 Video & Animation class, a double lesson on 30 April 2015

<u>13:45</u>
-kids are doing the film noir project
-lots of movement to start: up and down, mostly though because they are waiting to get film kit from the storage room
-some girls play with a prop (toy gun). Darren returns downstairs to ask a group (the girls standing) where they are going to shoot [film]

<u>13:50</u>
-I hear significant noise from upstairs. Darren goes up to talk to students: "Alright, guys…" and to get them focused

---

-girls (group of 4) very energetic, two of them animatedly discussing and planning their shot. One girl who went upstairs returns and tosses a boy's sneaker on the floor by the curtain, returns a minute later to get clothing, goes back up (clopping loudly in her heels, which I believe are props)

-A boy comes down with a horse mask perched on his head (rather than down over his face), the same mask I saw a graduating student wearing earlier [it's "Celebration Day" for graduates at the school today]. The boy enters from the curtain, looks at me and spots his shoe, saying "Oh, I found my shoes," then goes to girls' group.

-Girls' group now all in Studio [film ALCOVE] area. One girl, with script in hand, emerges to further draw closed the curtain

-the boy (L----) I hear getting lots of attention. Someone is constantly clicking the toy gun

…

13:56

-a boy leaves the studio, says "Ok, let's start filming". Other boy, who had recently come down to join, leaves with him

-"L-----, can you please focus!" I hear Darren say from above. He comes down to check on girls' progress in the studio: "Have you shot anything?" [they haven't]

-I mention next (to Darren) the energy of the space, how getting things (kids) focused can be tricky. His comments on this included:

-"It's a bit of a sandbox environment"
-"You have to keep a handle on it"
-"It can get a bit wild"

Figure 64. Field note: Darren's Year 10 Video & Animation class (30 April 2015).

My notes here cannot fully capture the flurry of activity in the space, but it is no surprise that Darren uses the "sandbox metaphor" with all its connotations of children (not teenagers), of unstructured play, mess, even chaos. Like James, who mentioned observing lessons where "the control, the order is wrong," Darren says that "you have to keep a handle on it" in this space because "it can get a bit wild," so the space seems to encourage student behaviour that the teacher must control. Students' use of space and behaviour in a classroom obviously might not align with teachers' intentions. As Massey (2005/2014) argues,

> In spatial configurations, otherwise unconnected narratives may be brought into contact, or previously connected ones may be wrenched apart. There is always an element of 'chaos'. (p. 111)

Of course, the nature of the Video & Animation course necessitates more action and movement, particularly during a lesson that requires filming rather than, say, digital editing on a desktop computer. Still, the atmosphere did feel a bit chaotic, which having the lesson

spread over the two floors seemed to amplify. As the lesson observation revealed, being spread over two floors meant that students could easily avoid teacher surveillance, depending which floor Darren was on, for he had to cover two floors to deal with noise or productivity issues. Downstairs, in particular, allowed students to be as far as possible from the teacher region.

Carrot or stick

Teachers have the power to move or sit students where they wish; teachers are the ones with keys that open and lock classrooms and cupboards; and teachers are in some ways conditioned to control student movement, perhaps a result of centuries of panoptic spatial configurations and the disciplining materiality of the school as institution. What emerged with some regions of the Media Hub was the use of space to reward or punish behaviour, as well as to categorize or shape student identity. Discipline, Foucault (1977/1995) argues, uses the double system of gratification-punishment, which establishes two poles of behavior, good and bad, with everything falling between (p. 180). This system also allows for precise measuring of such behavior. He gives the example of a "micro-economy of privileges and impositions" used by The Brothers of the Christian Schools[18], whereby "privileges," worth points, were used by students to escape punishment or impositions like copying out catechism questions (p. 180). Many adults would likely be familiar with the idea of students having to copy a text or write lines over and over as punishment. Today, schools and teachers across the world still use merit points or stickers to reward students for "good" behavior (or punish, in a sense, by withholding such points.)

A system of awards and debits, or demerits, Foucault (1977/1995) argues, helps differentiate individuals, and

> their nature, their potentialities, their level or their value. By assessing acts with precision, discipline judges individuals 'in truth'; the penalty that it implements is integrated into the cycle of knowledge of individuals. (p. 181)

This "knowledge of individuals" could be traced to the present day with how we increasingly monitor and normalise students—for instance, as Fenwick et al. (2011) point out, through individual portfolios and other such documentation that supposedly align with a student-centered philosophy (p. 162). Surely this almost invasive knowing of students can only

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[18] Founded in 1680 in France by Jean-Baptiste de la Salle

increase in the era of big data, of digital personalized learning based on algorithms. Another, more universal and familiar use of disciplinary space is when a particular school space, such as a classroom, is transformed into a detention space; students are immobilized—one might say *imprisoned*—at recess or after school in what might normally be their classroom, just another example of how space can have shifting meaning or identities.

During a discussion with Darren at the end of my classroom observation of his Year 10 Video & Animation class (30 April 2015), he made an interesting comment about how he sometimes uses the POD (ALCOVE) by the entrance (at right) as a disciplinary space:

Figure 65. Disciplinary POD at far-right, beside the out-of-frame entrance (April, 2015).

He said that he uses this corner space as a "time-out place" for rowdy kids. The hyperbolic description "rowdy" has negative connotations, of course, and perhaps a disciplinary positioning of these particular students is suggested by his use of the word "kids" rather than *students*. Also, he uses a metaphor usually associated with primary school: "time-out place," which sounds like a space for the enactment of discipline. The space, the PODS pattern (chapter 8), now excludes (for a transgression of non-conformity). Exclusion, as a function of disciplinary power, Foucault (1977/1995) argues, contributes to the normalisation of the individual (p. 183).

Darren's use of the PODS pattern as a space of exclusion, in addition to normalising the individual, also shows how space is never static, how it is always being negotiated, and how a

pattern (as part of a pattern language design approach) can be turned away from its intended function, for the PODS pattern was intended to facilitate and encourage independent learning or student collaboration. As a variant of Alexander et al.'s (1977) ALCOVE pattern, it was also meant to provide semi-privacy, forming a learning zone within the larger learning space. As a "time-out place," though, the pattern's intended purpose is upended and it turns into a disciplinary space. This "time-out" POD was close to the teacher region immediately on the other side of the entrance, so Darren's disciplinary use of space reinforces the notion of a teacher region, because he moves the "rowdy kids" closer to where surveillance, and the normalisation of the individual, is made easier from his position at the CAMPFIRE material assemblage of teacher-computer-whiteboard.

Darren's disciplining act, however, differs somewhat from what might happen in a traditional classroom fairly often. Because the Media Hub *does* have these PODS, the students are not necessarily *obviously* being disciplined; they have not been excluded from the classroom, and they are still using a space that is similar in configuration (PODS) to the other students—that is, the PODS pattern does not set them apart; it still provides semi-privacy within the context of the larger communal learning space. An undifferentiated or traditional classroom, in contrast, might have to be rearranged to create such a disciplinary space (such as moving a desk to a corner or the hallway), which could draw more attention to the non-conforming or *guilty* students. One the one hand, the PODS pattern dampens the visible disciplining and normalising of individuals; on the other hand, the pattern helps achieve the disciplining and normalising of the individual, through the spatial configuration's built-in partitioning. Again, and similar to how a classroom can become a detention facility at recess, the space's identity alters through a temporary expression of teacher power that students cannot easily contest.

The downstairs region

Comprised of patterns like SMALL WORK GROUPS, IDEAS WALL, and the *downstairs* CORNER SPOT, the downstairs region was a favourite destination for many students, both during and outside of timetabled lessons, not only because of its design but also because this region was far from—out of sight of—the teacher region bound up with the CAMPFIRE pattern. The preferred zone for students on this floor was the *downstairs* CORNER SPOT. This pattern represented an informal area with comfortable chairs that incorporated the following smaller patterns: SITTING CIRCLE, WINDOW SPOT, VIEW OF NATURE, LIGHT ON TWO SIDES OF EVERY ROOM, and POOLS OF LIGHT (Alexander et al., 1977):

Figure 66. Downstairs CORNER SPOT (3 October 2014).

Through user feedback and my own observations, it became clear that this zone was very popular, particularly for senior students' independent use as a study space instead of the library, which they often found too loud. While one might assume that students preferred this region because it was not under what might be understood as a teacher's panoptic gaze, in the next chapter I examine how a number of students actually associated this region with productivity and their preferred experience of learning *because* of its comfortable and informal atmosphere.

The comfort and informality of this downstairs region at times appeared to present a challenge to some teachers' traditional views of what learning looks like or how students should act. Students might have wanted to be in this space, but teachers did not always grant students access to it, or access was conditional. The downstairs region, particularly because of the CORNER SPOT, was used by James as extrinsic motivation, for example. In other words, this material assemblage served as a way, in this instance, for a teacher to normalise student behaviour. James reported:

> There's also, there's also a desire to work downstairs, which, um, which, depending on what they're doing sometimes I'll allow, I'll allow them to do it, but it's almost a reward in a sense, because too often in the past, you know, they, the usual suspects...

That he can "allow" them to work downstairs as a "reward" is an example of expressing power through the space itself. Of course, teachers usually do control the classroom, where people sit, and when they can access certain areas or materials. With any classroom, a

preferred learning zone or experience of learning can become a "reward," an extrinsic motivator with which to entice students into being compliant. The metaphor in the quotation above, "usual suspects," emphasises a deviation from normal behaviour and expectations by implying some sort of criminal behaviour. Naturally, the comment was made somewhat in jest, in a hyperbolic manner to emphasise the point. This perspective is similar to the "barracuda" metaphor he used earlier to describe students in the slacker zone, or the "rowdy kids" that Darren places in the front PODS area, or even Darren's "sandbox" metaphor, with its connotations of immaturity and chaos.

Later, James and I returned to this topic of students being allowed to work downstairs (while others from the same class continue to work upstairs):

> There's that kind of rights and responsibility sort of thing. If I just let you get used to working down there because I'm slack and you can do no work, then we're all losing.

Again, with the phrase "let you," we have connotations of power and control, but connected with a teacher giving over or losing power because of being "slack." James' conclusion that "we're all losing" is a strong condemnation that also implies competition rather than teamwork—where education is a teacher versus student construct. To be fair to James and the other teachers discussed here, my analysis of their actions and words does not represent a condemnation of their teaching, for they are each highly professional and caring teachers; rather, my analysis is meant to highlight how school space is controlled by teachers—by the metonymic *school*—in general, and how space, regardless of the design intentions or pedagogy behind a particular configuration or pattern, can also serve to control student movement and behaviour.

Conclusion

This chapter looked at how regional patterns of relations arose in the context of design patterns and the overall spatial configuration in the Media Hub. Patterns like CORNER SPOTS and the CAMPFIRE were meant to encourage student-centred activities and learning, student movement, and choice of learning zone; however, the data suggested the emergence of key regions that revolved around conventional issues of power and control: the *teacher region*, the *slacker region*, and the *downstairs region*. The first two regions perhaps existed in opposition to one another in that teachers' perception of a slacker region symbolised students' use of space to contest teacher authority or power. This perception, however,

reminds us that student identity can be projected onto them, and their normalisation achieved through material assemblages.

Although patterns like CAMPFIRE and CORNER SPOTS were meant to diminish regional patterns of relations, as well as conventional power structures and pedagogical practice, the inevitable mutability and sociomaterial nature of space resulted in changes to, and even the deletion of, what appeared to be successful design patterns. The contestation of the patterns also led to changes in learning practice and perhaps even social relations. Learning practice changed with the disappearance of CORNER SPOTS that facilitated independent and group work *not* involving desktop computing; in other words, learning that could be associated with courses other than IT. Social relations between teacher and some students might have been impacted, too, as suggested by the teachers' perception of a slacker region, their positioning of students as non-conformists, and how at least two teachers used space to control or discipline students. Teachers essentially re-purposed the space, disrupted the patterns, still another example of how the actual use of a space can be at odds with its design intentions, and how students have little power in a classroom.

Another key region that emerged was the entire downstairs level, but particularly the *downstairs* CORNER SPOT there. One teacher used access to the overall downstairs region as an extrinsic motivator; however, this region cannot be separated from the larger power structure of a school. Entrenched design patterns and pedagogical approaches, as well as other established sociomaterial patterns in a school, will almost certainly give rise to regional patterns of relations. Combining pattern language and sociomaterial approaches can be a useful tool for classroom design in that it necessitates thinking through, in advance and at each successive stage, how design choices can address issues like power, control and discipline, learning practice, and social relations. Ultimately, the *downstairs* CORNER SPOT was, in many respects, a successful design pattern, one that underpinned a learning zone that appealed to many students. Attractive for being comfortable, quiet, even conducive to work, it became established primarily as a student region because there was no regular teacher presence (being one of the furthest points from the teacher region that was represented by the whiteboard-desk-computer assemblage anchoring the CAMPFIRE). For students, then, being downstairs could have represented a way to escape the panoptic gaze. At the same time, the comfort of the region appealed to how some students saw themselves as learners—how they

reported their experience of learning and perceptions of place in this space, which is the focus of the next chapter.

Chapter 8: The Value of Local Transformations

Introduction

In the previous chapter, I applied a sociomaterial reading of the Media Hub to understand how a pattern language approach can underpin learning zones within a classroom, and how these patterns also relate to, or influence, the negotiation of power in the context of this ICT space. An additional focus centred on how students challenge or counter traditional teacher-student power struggles that tend to be embodied in traditional classroom design and familiar assemblages. My sociomaterial reading of the pattern language approach highlighted how space is always under construction, always open to contestation, so the purpose of a particular spatial configuration—through a pattern language—can still be altered in myriad ways by the people using it. Patterns can be effective, but they might not take root; or, they might be disrupted or undermined by traditional material assemblages—representations of power—such as a teacher region. In short, users negotiate space in unpredictable ways. Still, my data suggested that some of the patterns embedded in the Media Hub were successful or significant in how they addressed power imbalances.

Building on the previous focus of how users negotiated power in the space, this chapter will examine how the pattern-language design of the Media Hub, a local or small-"t" transformation, to draw on Horton and Kraftl's (2012) term, might have influenced students' learning experience and perceptions of place. As Rivlin and Weinstein (1984) have argued,

> We need attention to the school as place, as a physical entity and continuing experience in children's lives. Its appearance, the comfort and safety it affords, are important to children's personal and intellectual development. (p. 360)

Local level transformations, especially those involving teachers and students, therefore need to be taken more seriously, for they offer opportunities to empower the users of a school's everyday spaces. This chapter captures the value of listening to the authentic voices, one might say, of third culture kid (TCK) students in the unique setting of an international school. To remind, my second research question asked:

> To what extent does the Media Hub's spatial configuration influence students' perceptions of place and experience of learning?

One of my principal goals for the Media Hub project was simply to create a great learning

space, one which would evoke for users a sense of vitality, perhaps even enchantment. Creating such a space, I further hypothesized, might evoke a stronger sense of place, which could be achieved through design features that addressed malleable elements of the built environment such as lighting, acoustics, and furniture—the "soft architecture" (Horne Martin, 2002) or "Stuff" (Brand, 1996) of school spaces. My data, particularly student interviews and visual ethnography, provided a way to understand and interpret students' experience of the Media Hub, keeping in mind that many, if not the majority, of the students could be considered third culture kids (TCKs)—who could also be understood as a privileged group in a space of privilege, an international school; to be fair, these students are in an international school not by choice but often because of their parents' mobile professional lives and ties to the transnational capitalist class. Third culture kids might change schools (and countries) every two or three years, for example, so an international school offers a continuum in their studies (through a transferable, international curriculum) and a sense of familiarity. Perceptions of place might therefore take on special importance for this particular group of students. Also, one can imagine that, like students everywhere, TCKs are probably more concerned with the everyday life of being a student, in the everyday spaces of a school, than with which famous architect designed their school.

The first section of this chapter centres on responses to the Media Hub's appearance as it related to colour, light, and modernity, sometimes expressed in terms of its *cool factor*. I look to students' subjective impressions of its aesthetic appeal and their appreciation of the Media Hub as a learning space; and, their affinity for it in relation to specific design features, the novelty of the Media Hub as a whole, or a particular iteration during its ongoing transformation. I then examine how spatial configuration influenced students' learning experience or aligned with their learner identity. I focus in particular on the PODS pattern and then the downstairs region, for they appeared to have particular significance. A key theme that unites these two features of the built environment was *productivity*, how the Media Hub represented a different kind of working space, one where a student could get work done, be productive, yet at the same time be comfortable. A number of students positively associated *communication* and *collaboration* with their learning experience, which the PODS pattern appeared to facilitate. The PODS pattern (as spatial configuration) also reduced density, contributing to the freedom to move around and, in contrast with other campus spaces, a sense of *spaciousness*. I conclude the PODS section of this chapter by turning to some teachers' perspectives on the value of this pattern, how it offered an element of semi-privacy

and a sense of collegiality, which ultimately grew out of the spaciousness that the patterns and learning zones provided.

The significance here is the space's modernity, and how the Media Hub's patterns and well-defined learning zones might influence the TCK experience of learning and perceptions of place. Relph (1976/2008) argues:

> In both our communal and our personal experiences of places there is often a close attachment, a familiarity that is part of knowing and being known *here*, in this particular place. It is this attachment that constitutes our roots in places; and the familiarity that this involves is not just a detailed knowledge, but a sense of deep care and concern for that place. (p. 37)

This care and concern can be expressed *to* the students through the design of the learning space itself—how inviting it is, the quality of materials, and even how it might affect well-being. Moreover, a PAR project, by drawing on student feedback, can offer a sense of inclusion and empowerment, highlighting the value of a unique, local transformation like the Media Hub.

The final section of the chapter looks more closely at students' perceptions of place—still in relation to their experience of learning—through the context of a student's artistic vision for part of the downstairs region of the Media Hub. I examine key themes which emerged from the data, and which appeared to be influenced by the spatial configuration and some specific patterns. The first theme revolved around feelings of *peace and quiet*; the second, *cosiness*; and the third, having *one's own place*. Students' perceptions of the Media Hub, responses to how they felt there*,* ultimately were related to both the space's aesthetic appeal and key design patterns. Together, this experience of space and place contributed to a sense of attachment for some students, which, again, might have particular importance for TCKs, who often lack a traditional rootedness in their school experience.

Appearance

I was keen to understand what value the overall impression of the Media Hub's appearance held for students. The data suggested that such an impression tended to emerge through their reactions to design choices that revolved around colour, light, and modernity. The impression of the space as being *cool* was often a response to the Media Hub's spatial configuration and general atmosphere. Sometimes this response was related to material objects and patterns

such as WARM COLORS and PODS; or, the cool factor of the space related to a student's initial impression upon entering the room after yet another iteration of the ongoing spatial changes. Unsurprisingly, the Media Hub's design represented a stark contrast with the traditional appearance and layout of nearly every other non-specialist classroom on campus. The cool factor, while it could be dismissed as being a trivial response concerned only with aesthetics, is important because it represents a response to a local, authentic environment—a small-"t" transformation project—rather than the façade or appearance of a grand or iconic new building. Also, how a student perceives or feels in a space could have implications for both their experience of learning and perceptions of place.

One significant design change that related to the cool factor occurred immediately after the introduction of the red ergonomic chairs that replaced the original wooden chairs (7 April 2014):

Figure 67. Original chairs and horseshoe layout, view from entrance (17 September 2013).

Figure 68. New red chairs and horseshoe layout, view from entrance (7 April 2014).

This simple transformation elicited the following unsolicited and rapid responses from two students in my Year 8 English class when they first saw and tested the new chairs:

-Cool. They're bouncy. [male student]
-They're so awesome! [female student]

Throughout the Media Hub's ongoing transformation, students continued to vocalize their appreciation for the space's appearance and atmosphere; for example, in May 2014, three female students in Year 9 came to the Media Hub to borrow a digital camera. I noted their reactions to the red ergonomic chairs, for they had not yet seen this iteration:

Student visitor 1: Whoa!
Student visitor 2: It's so nice!
SV1: Cool!
SV2: It's a nice working area.
SV1: Like I imagined [the Video & Animation course space] would be.

Their initial responses demonstrate how enthusiasm for a space, because of its appearance or atmosphere, might positively influence their experience of learning. A space is "cool" for the first student, but still a space for "working" for the other, suggesting that these concepts are not mutually exclusive. Also, the look or feel of the space aligns with one student's imagined or idealised vision of the space.

Certainly, the red chairs brought a previously-missing accent of colour to the space, adding some vibrancy. Against a "relatively calm backdrop" of light-coloured walls (what the Media Hub had), Barrett et al. (2015) found that

additional colour elements in the classroom played a complementary, stimulating role. For example, relatively bright colours on the floor, blinds, desk, chairs...add […] extra highlights and flashes of colour. (p. 36)

The vibrant colour of the chairs *combined* with the abundant natural light in the space (LIGHT ON TWO SIDES OF EVERY ROOM) likely captures the essence of Alexander et al.'s (1977) WARM COLORS pattern; the authors argue:

The greens and greys of hospitals and office corridors are depressing and cold. Natural wood, sunlight, bright colors are warm. In some way, the warmth of the colors in a room makes a great deal of difference between comfort and discomfort. (p. 1153)

The authors do add, however, that it is not just the colour of the things that achieves an

impression of warmth, but the colour of light, which in any space involves a complex relationship between the light sources and how this light bounces off various surfaces. As opposed to a room with lots of natural sunlight, fluorescent lights in a hospital corridor, for example, bounce off green walls to create a cold light in the green-blue range (p. 1154). The Media Hub, in contrast, had the benefit of ample natural light upstairs coming from three sides (LIGHT ON TWO SIDES OF EVERY ROOM).

The potential value of the space's appearance can be inferred from the following comments that different students said in rapid succession, again in the context of the new red chairs:

> -Opener [sic]
> -Lighter
> -Adds more light
> -More modern
> -They're really cool
> -The wooden chairs [previously] give, like, the impression of a classroom

These responses show that students can be aware of, or even sensitive to, the effects of the built environment, and how the design of a learning space has the potential to alter how one feels in that learning space, which ultimately could have implications for how a student experiences learning—what might be the student's own attitude towards learning, or approach to learning, or her perception of what kind of learning should occur in that space.

The final student comment above was interesting in that it was framed as a contrast. Unlike the new red chairs, the student felt that "The wooden chairs [previously] give, like, the impression of a classroom." The word "classroom," an innocuous and everyday word, in this context carries negative connotations given that this comment immediately followed positive responses about modernity and coolness. The word "classroom" feels pejorative here rather than merely denotative. The implication, through contrast and omission, is that the previous iteration was not modern or cool. Speaking further about the experience of being in the Media Hub's latest iteration, this same student said that it "was good to be in a different room." Her frame of reference, then, was the standard—that is, traditional—appearance and configuration of the other general (non-specialist) classrooms on our campus. The students' responses point to how the visual appeal and spatial configuration can contribute to the *feel* or experience of the classroom space, or even how that the built environment can be bound up with the motivation to learn (Walden, 2015).

The PODS pattern

This section examines how the PODS pattern related to students' experience of learning. PODS, like the CORNER SPOTS, represent a variant of Alexander et al.'s (1977) ALCOVES pattern:

Make small places at the edge of any common room, usually no more than 6 feet wide and 3 to 6 feet deep and possibly much smaller. These alcoves should be large enough for two people to sit, chat, or play and sometimes large enough to contain a desk or a table.
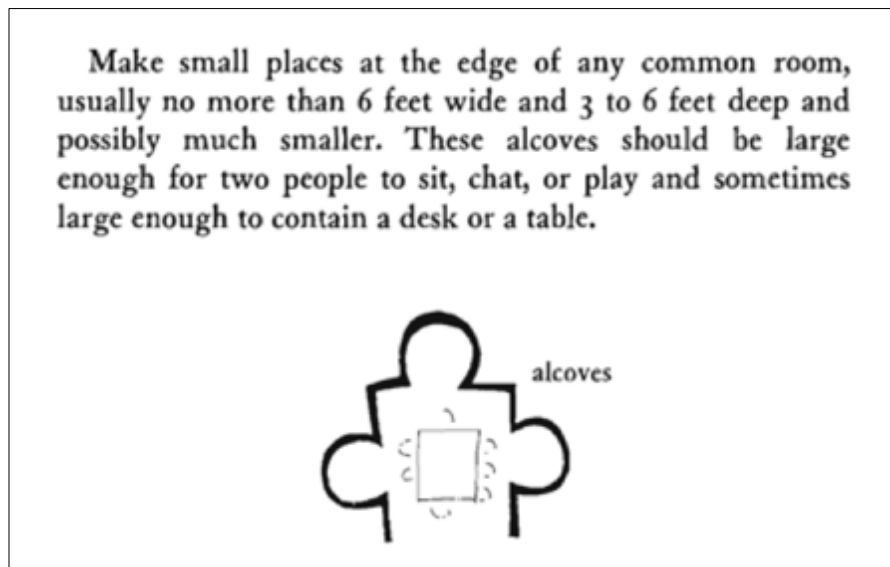
alcoves

Figure 69. ALCOVES pattern instructions. (Alexander et al., 1977, p. 832)

Although Alexander et al.'s (1977) ALCOVES pattern derives from research into home dwellings, the authors conclude that "It is not hard to see that only slightly different versions of the very same forces exist in all communal rooms" (p. 831). To remind, a pattern language is meant to adapt to each unique space, and people are meant to modify patterns or even add their own. Our version of the PODS had the high tables upstairs arranged so that two to four students were in semi-enclosed spaces:

Figure 70. PODS configuration, entrance to Media Hub is out of frame, at right (April, 2015).

Inspiration for the PODS

When I had asked Darren (15 May 2014) for his initial impression of the overall look of the Media Hub's new layout with the high tables in the PODS configuration, he said: "Looks like a proper design studio." This impression, he added, was because of the grouping of tables (creating an alcove of sorts), enabling people to work and talk at the same time, he said. I considered his reflection on the practical value of the configuration to be somewhat authoritative in the context of the Video & Animation course, at least, for he had experience working in a design studio in his time as a digital animator for a Hollywood film studio. Having a professional feel and look to the PODS suggests an authentic space. If educational practice needs to enable students to act "as-if," for example, as if they are scientists when in the school's science lab (Gee, 2013), then there is value in creating more authentic spaces in schools, which can be achieved through fairly simple design choices.

Darren's description of the Media Hub's new PODS layout corresponded to an image that I had come across in my initial search for design inspiration before starting the Media Hub transformation. I later included this image in a presentation to colleagues on the Media Hub project:

Figure 71. POD workspace at Pixar (Office Snapshots, 2019).

The desktop computer-standing high table configuration in this image would influence the Media Hub's PODS configuration upstairs, of course, but also in another zone downstairs.

The downstairs PODS: a new CORNER SPOT

The Pixar pod partly inspired the transformation of a new CORNER SPOT downstairs:

Figure 72. iMac computers downstairs, left window corner (October, 2013).

Because this zone was part of the downstairs region of the Media Hub (which was not timetabled for lessons), its original purpose was to facilitate independent work, including short visits by students from neighbouring classrooms. A limited budget, and the inherited computer cabling, however, meant that we initially drew on a familiar spatial configuration: desktop computer workstations closely arranged in a row. One of my Video & Animation students, S3, later suggested to me that this spatial configuration should be changed, perhaps becoming something like the PODS upstairs, in order to improve face-to-face work and communication, he argued. His suggestion therefore partially inspired a new iteration of this corner by the start of the next academic year. Using high tables, like in the Pixar example earlier, to create a sense of semi-privacy and to facilitate more standing and movement, this newly defined CORNER SPOT, using PODS, was certainly more visually appealing:

Figure 73. The new downstairs CORNER SPOT using PODS (October, 2014).

The configuration is more spacious, encouraging independent work through a sense of semi-privacy, although nowhere near the semi-privacy offered by the mostly-enclosed Pixar pod. Gone is the cold grey aesthetic, replaced with a warmer and more inviting atmosphere that has been created through the intertwining of other patterns: LIGHT ON AT LEAST TWO SIDES, WARM COLORS (flooring, chairs), POOLS OF LIGHT, and VIEW OF NATURE. Unlike the previous configuration, there is now reduced density. This transformed area, now a purposeful CORNER SPOT, firmly represented another distinct learning zone in the Media Hub, one that students could *choose* to use and visit. The high tables and increased space between desks provide opportunities for easy communication or collaboration, if desired, through unrestricted movement between one another's work stations (to say nothing of the health benefits—and potential impact on learning—of standing and moving). In contrast, the previous configuration is reminiscent of the horseshoe configuration upstairs where students were shoulder-to-shoulder, basically immobilized, a symptom (and probably a cause) of typical classroom density.

PODS and reduced density

A setting is spacious if it allows one to move freely. (Tuan, 1977/2011, p. 55)

The Media Hub as a whole appeared to achieve reduced density through the creation of different learning zones that were underpinned by patterns such as CAMPFIRE, IDEAS WALL, CORNER SPOTS, and PODS. The PODS also influenced students' ease of movement, contributing to a sense of spaciousness, particularly in contrast with other classrooms on campus. Because many of the classrooms on our campus were small or cramped, changes to

the spatial configuration (desks and chairs in rows) would be rather difficult. Certainly, in most of these rooms, one could not create different learning zones as was the case in the Media Hub, which was a much larger space. Two students, during a group interview, noted the limited movement in other classrooms, specifically contrasting the Media Hub's spaciousness with another IT classroom on the third floor of the same building:

> T: Yeah, how does that compare with, for instance I know you
>   have a class upstairs in the IT room here in [building's name]?
> S10: The computers are all around the walls in {that one, so it's just}
> S12:   {I…really do not like that room}
> S10:   It's just a straight line more than anything. It feels more rigid, like if you're—
>   like a hundred-year-old {classroom}—
> S12:   {Prison}
> S10:   —in a way
> S12:   More like a prison, like you cannot move out of your seat.

Their reflections demonstrate how a seating arrangement can impact students' experience of learning; however, experience of learning, here, appears bound up in a sense of place—a subjective response connected to the arrangement of material objects (chairs-desks-computers): rigid and old-fashioned for the one student, "like a prison" for the other. The language also implies being under control and, in this context, immobilised. In contrast, the standing tables and their configuration in PODS were design choices meant to reduce density, to facilitate movement, and to create opportunities for collaborating or seeing one another's work, all the while contributing to an overall feeling of spaciousness.

I asked a few female students in Darren's Year 10 Video & Animation class about their impressions of the high tables that created the PODS, and one student replied: "You can sit down or stand up, depending on what to do." Her friend said that she liked "half-standing…it's easier to get up," and added:

> I like having my legs stretched without having to annoy people with, like, moving
> around.

The first student then said that the room was a nice change because "We sit all day." Based on these responses, one can infer that the ability and freedom to move could be preferences for these students' experience of learning. These students have made positive connections between spaciousness and learning because they felt a sense of greater freedom to move—without that movement annoying people—or to be autonomous.

Teachers, too, might be immobilized, but by regional patterns of relations, particularly the material assemblage of the teacher region one associates with the "front" of a classroom; this teacher zone, as discussed in chapter seven, is an assemblage that tends to draw in and tether teachers. The spatial configuration of the rest of a classroom—what Sørenson (2009) would term the student region—can also act upon teachers, in a sense keeping them in the teacher region. James, the head of English, noted that some of the smaller classrooms on campus inhibited his ability to circulate and reach students, for example. If a spatial configuration limits teacher circulation, this could have implications for the students' experience of learning, for some students conceivably might not receive the same individual support and attention as others. S8, in contrasting the upstairs PODS table configuration with a traditional classroom seating arrangement, said that the PODS pattern was better for student work and mobility, for sharing and looking at one another's work. He hypothesized, too, that the configuration was "probably better" for teachers coming around to help students or view their work as well.

My own teaching experience, observations of classes, and discussions with participants suggested that the reduced density achieved through the PODS pattern (with standing desks) allowed teachers to easily and comfortably circulate in the classroom, to visit students without disrupting other students working nearby. As James said, "I can very easily see and talk to students individually or in pairs and not be affecting other students." His comment captures how the spatial configuration can have implications for social relations and students' experience of learning. Not only can the semi-private nature of the PODS limit disruption to other students but also it could help avoid drawing attention to sensitive teacher-student conversations, the ones that typically involve withdrawing outside a classroom, into the hallway, which can invite speculation, unwanted attention, or embarrassment for the student. This ease of access to students in order to provide guidance or support likely has implications for the student's experience of learning—and probably the teacher's experience of teaching. A crowded room or seating configuration, in contrast, would tend to hinder or even prevent sensitive student-teacher interactions that would benefit from semi-privacy within the larger communal learning space.

S10, for example, spoke positively of the semi-privacy achieved through the PODS:

> S10: Those offer us a division from the rest of the class in a way, but not too much

that we're fully cut off from them.

T: Yeah.

S10: So, we can still interact with them if we want to, but at the same time there's this unspoken-of division that I guess, to use the word again, from, well, the rest of the class so that if we want to be alone we can be.

S10's reflection speaks to the value of the PODS pattern in two key ways: first, that the spatial configuration provides choice, the choice to withdraw or interact with other students "if we want to," which an undifferentiated space could not provide; second, his interpretation highlights the opportunity for semi-privacy created by the pattern, and made possible through reduced density. A semi-private zone could not have existed with the horseshoe configuration that was previously upstairs in the Media Hub.

The high tables also had the added benefit of putting teacher and students at nearly the same eye level, which some teachers and students appreciated. Archie, an English teacher, told me that the high tables felt "collegial," an impression that I agreed with. Below is an example of IT teacher Darren visiting a student at one of the PODS, and one can see how teacher and student are nearly at the same eye level:

Figure 74. Darren visits students at high table PODS (October, 2014).

One might wonder if this configuration could positively impact social relations and therefore students' experience of learning. A "collegial" atmosphere suggests a more informal experience of teaching and learning, which, although perhaps desirable for some, might be at odds with our francophone section's preferred experience of learning. I shared Archie's "collegial" comment with James, who responded:

I'd agree. No, you do, um, you do, and it's, um…it does when it's, when it's, when it's working well.

There is caution in his response, though, a conditional situation of "when it's working well," a reminder of how teachers' views of what should be happening in the space might not align with what students want to happen, or what is actually happening. Student productivity, for some teachers, is only true productivity if it looks conventional or traditional—that is, aligned with a traditional spatial configuration and the activity or productivity which it permits.

PODS and productivity

My data suggested that the PODS pattern had value for students' experience of learning in terms of facilitating productivity, which itself seemed to align with students' preferences for communication, collaboration, and comfort. In contrast to the original perimeter (horseshoe) seating arrangement, the high tables arranged in PODS enabled students to see one another better, and communicate more easily, and with more students at any given time:

Figure 75. Students working at PODS upstairs (October 2014).

In one group interview, three students from my Year 10 Video & Animation course spoke about the value of the PODS pattern:

> S12: 'Cause, like, as where we sit we can work together but we can also work alone.
> T: Yeah.
> S12: 'Cause there, it's far enough to work alone, but you can just turn around.

This reflection represents a powerful endorsement of the PODS pattern. S12, like S10 earlier, has captured its intended purpose and essence: the configuration creates a semi-private learning zone for individuals or small groups. The students are slightly apart from, but still

among, the larger group, so they have the choice to "work alone" or "work together" as part of the small group (POD), or to join others by visiting another POD; and, of course, there was supposed to be the additional *choice* to meet with others at the CAMPFIRE. Importantly, in terms of the experience of learning, S10 connects working (productivity) with the spatial configuration (the pattern), adding later that, "everybody's, like, working together" when in the PODS configuration, which touches on the idea of collaboration, or at least a sense of unity in the students' productivity. Moreover, S10's comment about students interacting if they "want to" highlights the sense of empowerment, the feeling of choice, that this spatial configuration appeared to offer, so it is an experience of learning, presumably a preferred one, that originates not from the teacher but from the student.

Darren also favourably reported a similar use of the space:

> A: Um, the, the high tables are, um, great. They, I find that the kids were way more productive when they're using those.
> T: Oh, interesting.
> A: Way, way, way, more productive.
> T: In what way?
> A: {Because}
> T: {Like}
> A: What they've done naturally, and this is not me pushing them towards doing it, is they work in groups of fours, back-to-back—
> *<interruption—our colleague enters the office and we three exchange pleasantries>*
> —Ok, so um, so what they've naturally done is work back-to-back, so that what they do is they work collaboratively.

The PODS facilitate productivity, particularly in the context of collaborative learning, which was a guiding focus for the Media Hub as a whole from its inception and proposal. (The reader might recall, from the previous chapter, that Darren also sometimes used the PODS to discipline students.) The result is collaboration and openness, but a kind of openness that is not bound up in control (panoptic observation) like the horseshoe seating configuration in the Media Hub's early iteration.

Communication and collaboration

A motif that emerged from a number of students' comments was the preference for communication and collaboration—or at least the choice to communicate and collaborate. The Media Hub's configuration appeared to provide the conditions for such experiences of

learning through patterns like CORNER SPOTS and PODS. During my interview with S3, I asked him what design features he liked in the Media, and what he would add. One suggestion was more group tables. He also said:

> I've done a lot of group work when sitting in [a] line, people never really communicate much; when you're sitting at a round table here, even if we're using four laptops, there's still more communication going on—

He explained that he preferred computers that were arranged in groupings, or PODS, but facing inward rather than in a line, because "If you're sitting in line, everybody's just sort of working on their own little thing, nobody asks many questions." By contrasting with computers in a traditional row, he has highlighted a missing—presumably preferred—*experience of learning* when he talks about asking questions, an act which connotes knowledge exploration, and a sort of communal learning experience. Although work did get done in the line to which he refers, he appears to prefer a learning experience that involves communication.

Interestingly, S3 does not use the word *talking*, but rather *communication*, which can imply productivity, or a facet of the learning process. His comment calls to mind Horne Martin's (2002) comparison between a horseshoe and a group seating arrangement whereby the horseshoe arrangement—basically one long row, so a variant of the traditional desks in rows configuration—encourages or reinforces teacher-centred pedagogy. S3's instinct is for student-centred pedagogy where students could ask questions of one another, which the PODS pattern appeared to easily facilitate.

Still another student compared the PODS configuration with the previous horseshoe seating configuration. S12 told me:

> S12: It's just, like, unlike last time where you're just, a line—
> T: Uh-huh.
> S12: —like this.
> T: Yeah.
> S12: Is just, you can't really talk to the people around you.
> T: Ok.
> S12: Meanwhile like this, you can just turn around and everybody's like working together—

Once again, the themes of communication and collaborative work emerge, reflecting an experience of learning centred on productivity that one can infer is made possible, for S12,

through the PODS pattern.

Darren had further positive reflections on, and insightful interpretations of, the kind of learning experience offered by the PODS configuration; for example, he said:

> Kids like to work in groups—back to back—then they can turn around to discuss. Great for teachers as well.

His reflection is reminiscent of the students' reflections, earlier, on their own learning experience where productivity and communication (talking with one another) are not mutually exclusive, a point that is supported by another reflection from Darren on the value of the PODS pattern:

> A: And so they work in little groups, and it almost forms like a little room, if you see what I mean.
> T: I do see what you mean.
> A: And, um, and that really works. And it almost separates them off from everyone else; and they quite like it, because it means they can be quite disciplined with their working {approach}—
> T: {Yeah}
> A: —because they can work together and then literally spin 'round on the stools and 'gonna go "oh, I'm kinda doing this and I'm doing that {kinda thing.}
> T: {Yeah.}
> A: And then they're kinda like, "ok, cool," and they can talk together, and it's like they're enclosed, yet part of the whole group, whereas the, the line of tables, ah, they kind of lose focus.

Darren's interpretation is a powerful example of the potential value of the PODS pattern, and a reminder of how the pattern aligns with the concept of different learning zones within the larger learning space; moreover, and more importantly, his observations capture the *experience of learning* that is achieved through the pattern—the collaboration, the productive communication, and the dynamic or active sense of engagement conveyed through the image of students who "spin 'round on the stools" to announce to others what they are working on. Even the relationship between students' experience of learning and perceptions of place, as Darren imagines it, comes through. In addition to noting their feeling of being enclosed yet part of the larger group, he also used the expression "ok, cool" in the context of how he imagined students might feel as a result of the pattern. From Darren's point of view, talking and productivity are not mutually exclusive within the context of the PODS pattern. Instead, it is the configuration of computers in rows where he believes that students "kind of lose focus." S8 also highlighted the social aspect of the PODS configuration, how they allowed for

informal yet productive chat; he also noted the benefits of the sightlines across the PODS (to the next POD, for example). These perceptions capture the kind of learning that is possible through what turned out to be a crucial pattern in the Media Hub's design, the PODS.

The downstairs region

The downstairs region of the Media Hub was a very popular location for students. Like the PODS, this region was connected with reduced density and the potential for increased productivity, as some students suggested. Unlike the PODS, though, the downstairs region was more frequently associated with comfort, a feeling—for students—that still related to productivity and a preferred experience or learning. Before examining students' responses, a reminder of the region's development is necessary.

The downstairs of the Media Hub, as we inherited it, still had the old shelving from when the space was the primary library:

Figure 76. Downstairs Media Hub, original shelving and layout (March, 2012).

After having the shelving removed, we added round tables for group work, as well as some posters, but the space felt a bit lifeless, lacking firm patterns or learning zones:

Figure 77. Downstairs Media Hub, early layout, view from window corner (March, 2012).

The back ALCOVE, painted black, was intended to serve as an area for filming, but the space eventually proved to be too small, too cacophonous. One can see at the left of the photograph that what would eventually become the *downstairs* CORNER SPOT had yet to take shape (the rug and lone chair were signs of the intended pattern). The later addition of an IDEAS WALL (unseen wall at right), desktop computers (at photograph's vantage point), and the firm establishment of a comfortable CORNER SPOT would increase the aesthetic appeal of the overall space and establish clear learning zones for ease of movement and potential differentiation in approaches to learning.

The upstairs floor of the Media Hub was always meant to be the timetabled (or *official*) teaching and learning area, for it had the class set of 24 desktop computers, a whiteboard with interactive projector, and the space could be booked by teachers outside of the timetabled lessons. Downstairs, however, was to be the flexible-use space: not bookable, but instead available to all teachers and students for less structured or less formal learning and study. The downstairs space was configured to encourage and facilitate (1) group discussion with the help of five round tables, each seating four people (SMALL WORK GROUPS pattern), and (2) independent work, perhaps in the *comfortable* CORNER SPOT and the opposite CORNER SPOT consisting of the four iMac computers on individual high tables. The downstairs space could also be used by a class that was already timetabled upstairs, with students moving downstairs for independent or group work, thus giving all users more space and the freedom to move. Some English teachers, for example, used the space for whole-class activities and work, as a change from classrooms that perhaps did not feel as spacious. In the next photograph, one can see the pattern SMALL WORK GROUPS in action:

Figure 78. SMALL WORK GROUPS in the downstairs region (October, 2013).

A year later, though (March, 2014), the space appeared a bit jumbled, lacking a firm spatial configuration:

Figure 79. English class in the *downstairs* CORNER SPOT, view from ALCOVE (March, 2014).

The somewhat chaotic appearance of the space and the disappearance of the SMALL WORK GROUPS pattern provide a clear reminder of the changing nature of space, how it is always becoming, or subject to shifting identities in spite of design intentions as expressed through a pattern language; interestingly, the eventual *downstairs (comfortable)* CORNER SPOT pattern (seen in the background of the image above) is being used by an English teacher to conduct a full-class activity although it was intended for independent or semi-private work.

A productive space

This *downstairs* CORNER SPOT was a popular retreat for students, whether during timetabled lessons or for students' independent use. While its comfort and informality attracted students, this same informality presented a challenge to some teachers' views of what learning should look like or what classroom behaviour should be. In other words, students looking productive might only be associated with traditional classroom configurations. A number of students, however, clearly associated the spatial configuration and atmosphere with productivity. S3, a Year 12 student, who the previous year was in my Video & Animation class that met in the Media Hub four periods per week, reflected on the comfortable *downstairs* CORNER SPOT:

> ...for example, English class we've got half of us who have laptops, we come sit down here, and we're all sitting there in the chairs and it's all very informal, but we still get stuff done…it's not really much pressure from school anymore at that point.

In spite of the informality (or perhaps because of it), the students "still get stuff done." Also, the metonymic "Pressure from school" gets at a vague *feeling* of power that dissipates or dissolves because the students are no longer under direct observation.

Independent learning, according to S1, is what the Media Hub's downstairs region, particularly its CORNER SPOT, was best for. In my interview with him, he reported how he would go to the downstairs region of the Media Hub during his free time because the area in the library dedicated to senior students would get too loud; he explained how the library

> devolves into [a] less productive space than it should be used for, and so I head over to the, uh, the Media Hub if it's open, and there's no class using it. And I'll go downstairs—comfier chairs and quieter atmosphere. And it's colder, that's always appreciated.

S1 was a top student, highly motivated, so his desire to be in a productive space would likely be greater than most. A student being able to access the Media Hub for independent work, though, was not guaranteed, and his comment "if it's open" reflects how students have no official control of the space (which can lead to attempts to contest this control, or at least assert ownership, as a vignette later this chapter demonstrates). The references here to the "comfier chairs," a quiet atmosphere, and even his comment on the preferred ambient temperature, show that many factors can contribute to how a student feels in or experiences a learning space, and, significantly, that students are indeed aware of how the built environment can affect their experience of learning.

Darren also connected the comfort of the *downstairs* CORNER SPOT with productivity, saying that it was

> widely regarded as the place to read, revise or just chill out without the cacophony of the MMC [library]—and it is also a bit of a kept secret that only year 12's and 13's seem to be aware of...or willing to share.

One can infer the need for a quiet atmosphere in the intended uses that Darren connects with the space: reading, revising, and chilling out. Also, this reported unwillingness to share the "secret" space hints at a kind of attachment, perhaps a perception of place. In contrast, James had the following to say about some students who tend to lack self-discipline and who, when downstairs, typically go straight for the comfortable chairs:

> You know, you can see them sitting—and I often remove them from those chairs straight away and because, but again it's that, I don't want them linking, 'I'm sitting in a nice comfy chair' to 'let me just switch off and chill.'

His interpretation suggests that material objects, the chairs themselves, have a kind of agency, that they can influence and encourage certain kinds of behaviour, or even approaches to learning. The theme of power emerges in this interview snippet as well. As discussed in chapter 7, teachers have the power to control students' movement, to discipline them; here, James can "remove them from those chairs straight away" in order to prevent them linking comfort with being unproductive, which is the opposite connection made between the learning experience and the space that a number of students reported.

These different responses to the comfortable *downstairs* CORNER SPOT might reflect a person's preconceptions about education. Such preconceptions could affect how a person learns, or to what extent a person is a productive learner in a given space. Maybe just the appearance of a comfortable space can send a message about what *should* or *could* happen there. In this respect, the *downstairs* CORNER SPOT is an assemblage of the material and social. Experience of learning and perceptions of place, in response to the Media Hub's design and configuration, align with the idea that space is produced through culture and practice. As Rivlin and Weinstein (1984) argue:

> Schools become the arena for communicating to children the value system of our culture, one that is largely middle class and white. They concretize the norms by which behavior is to be judged, identify status, separate children from each other, and continue a system that will be perpetuated throughout most children's lives. In considering the social organization of a classroom, it is possible to examine this process and its environmental components. (p. 354)

In the context of international schools, then, the TCC can be understood as the dominant culture, one of privilege that is predominantly Western. This culture establishes a particular value system that is easily reproduced across international schools and certainly conveyed through iconicity. The francophone section in our school tends to approach education from a different value system than the anglophone or Western section, and those values might become bound up in the materiality of a classroom's configuration, or how students expect the configuration to be.

A student's design vision

> Places are not abstractions or concepts, but are directly experienced phenomena of the lived-world and hence are full of meanings, with real objects, and with ongoing activities. They are important sources of individual and communal identity, and are often profound centres of human existence to which people have deep emotional and psychological ties. (Relph, 1976/2008, p. 141)

As part of the iterative process of designing and transforming the Media Hub—in the context of a participatory action research (PAR) project—I often turned to teachers and students for their feedback or advice. For example, before the installation of the new imitation parquet flooring in July, 2014, I showed a range of floor samples to the principal, to colleagues who used the Media Hub, *and* to some students, in order to get their feedback on what shade and pattern we should select. S13 praised this consultative process in our interview, saying that by asking students it "show[ed] that you also care about the community," which I understood to mean the student community. He continued:

> S13: There are so many places in this school where they just change, and they obviously don't care about the students' opinion and they—the fact that you asked the students about the floor is that you're trying to show that really that this is supposed to be a place for students to be able to work—
>
> T: Yeah.
>
> S13: —and to be able to work comfortably.

I was struck by his use of the word *place* rather than space, which suggested a kind of attachment. At the same time, the Media Hub as *place* is associated with where students *work*, another example of how comfort and work are not mutually exclusive for students.

"What kids are looking for"

I asked S14, one of my Year 9 English students that I knew to be a decent artist, to sketch some ideas for how to transform the downstairs floor of the Media Hub, except I did not tell her my ideas or wishes for the space. Instead she sketched her own striking and original vision for downstairs that centred on what looked like patterns, including what she called READER'S CORNER and PROJECT CORNER:
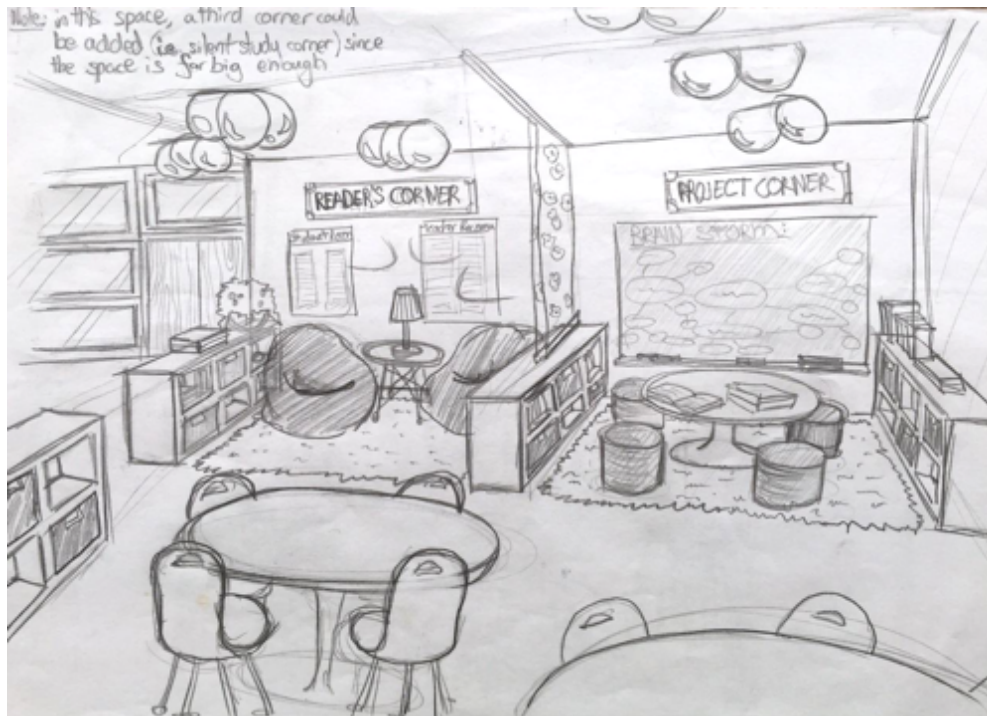
Figure 80. Student concept (vision) sketch for lower floor of Media Hub (November, 2013).

One can easily infer a quiet and comfortable atmosphere occurring in this space, but productivity is also implied through both the word "project" and the brainstorming wall in that corner. The designation of a READER'S CORNER connotes quiet or silence, of course; also, the student artist adds a note in the top-left where she imagines adding a "third corner" to be designated a "silent study corner." A calm, quiet, and inviting environment is clearly important to this student, something she seeks, similar to what the other students reported earlier.

Her design and the naming of the zones echo the pattern language I was using, even though I had not shared this language (the patterns) with her; for example, the CORNER SPOT (variant of ALCOVE) pattern is referred to four times in this drawing in which she, too, has imagined separate learning zones, each providing an element of semi-privacy within the larger shared space. She also adds patterns echoing POOLS OF LIGHT (the small lamp in the READER'S CORNER) and SMALL WORK GROUPS (via the arrangement of four cushions or chairs around the tables). The patterns therefore can help define the social aspect of the space—what will happen there—as well as the experience of being there.

I gave a copy of the drawing to three female students from my Year 11 Video & Animation course before my group interview with them (27 February 2014) in order to elicit their

responses to the other student's artistic vision, and, as they did with the sketch discussed in the previous chapter, they spent approximately ten minutes annotating it:

Figure 81. Students' pre-interview comments on S14's vision sketch (27 February 2014).

The comment added in the centre of the drawing, in green, that "We don't really need to read in ICT," reveals how this student identified with the Media Hub in relation to why she was always there—for the Video & Animation [IT] course. Her perception of the space is connected with the curriculum and the subject's associated practice, a reminder of how space is constructed by both the material and the social. Two of the students also wrote suggestions for additional computers instead of the shelves or the READER'S CORNER. In the larger context of the Media Hub, however, my intention for downstairs was to be a space for any user or subject, not just IT. Although these two students' reflections suggest that they connect the space with only one subject or practice because that is how they know and experience the space, the idea to introduce "blue fairy lights for 'ambience'" hints at a keen awareness of how they wish to *feel* in the space, or how material objects and spatial configuration (as based upon the student sketch) could contribute to perceptions of place.

I also shared S14's sketch for the downstairs space with Craig (the head of IT, to remind), and his response to her artistic vision was:

> This is a great indication of what kids are looking for.

He admired her drawing and immediately asked to show it to the principal; however, I never learned the outcome of sharing the sketch with the principal. As a reminder of how space is always being negotiated within the context of power relations in a school, this student's vision for the downstairs space never came to be. Possible contributing factors included a lack of funding, the timing of my sabbatical, or the IT department wanting to hang on to, and lay a stronger claim to, the space—which is what later happened through the material everyday *things* related to film such as box lights, tripods, and a green screen, which were often haphazardly left lying about the downstairs space. In contrast, the READER'S CORNER would likely have been associated with English courses, not with IT, for the cosiness of the setting easily aligns with the quiet act of independent reading.

A quiet place

A number of students and teachers shared positive feedback about the calm and quiet atmosphere downstairs in the Media Hub, sometimes contrasting it with the library. Referring to the downstairs area in general, S3 said:

> Also, this is a much smaller area than the MMC [library], which makes it a lot quieter, but also more peaceful, I'd say.

Of course, this impression is connected to the fact that few students knew about the downstairs area of the Media Hub, so few students ever went there. In contrast, the busy library (known as the MMC) "is a lot louder than it should be," S3 said, whereas the Media Hub felt informal and was "less distracting." S1 echoed this point about the library being too loud, which led him to seek out the quiet of the downstairs region of the Media Hub. Even a maths colleague, Robert, commented on the atmosphere downstairs, saying that it "does radiate a certain quiet." I recorded in my field notes how one day, in 2013, a few students came to the IT office (next door to the Media Hub) shortly after their lunch period to ask for access to the downstairs Media Hub, for they had a free lesson. Out of curiosity, I asked them why they were using that space at that moment, to which one responded:

> Because it's lovely, it's quiet, it's comfortable.

Thirty minutes later, I observed one of the students in the *downstairs* CORNER SPOT sitting in one of the comfortable Ikea chairs, her shoes off, one leg curled up under her, and her laptop on her knees. The two other students were working quietly and independently at the nearby long table, one on a laptop, too. I noted that the students were working in complete silence.

A cosy place

Along with the motif of *peace and quiet*, the word "cosy," and its variants, including "comfy," regularly emerged in interviews and discussions, as well as through some visual data. Cosiness was sometimes bound up in students' preferences for the experience of learning; at other times, cosiness related to perceptions of place or even a sense of ownership. For teachers, in contrast, the word "cosy" in the context of learning spaces might carry connotations of a slackening in purpose or productivity, yet cosiness was often the atmosphere that a number of students desired or reported feeling, but not to the exclusion of productivity. S14's proposed vision for the downstairs region, through her sketch discussed above (Figure 80), seems to embody this feeling of cosiness in many respects. Through enclosure, semi-private zones, a non-traditional design (informal), carpets, and comfortable seating, her READER'S CORNER and PROJECT CORNER convey a sense of cosiness. The READER'S CORNER also has a small lamp to strengthen the purpose or social function of the space; in this way, the student has developed her own pattern language, independently generating patterns that echo Alexander et al.'s (1977) ALCOVES, COMFORTABLE SEATING, SMALL WORK GROUPS and POOLS OF LIGHT. Her instinct for these patterns hints at the universality (via infinite variations) that Alexander et al. (1977) claim the patterns represent. Even if this universality were definitively provable, what this chapter and the preceding one have shown is that patterns will always be susceptible to sociomaterial forces.

A sense of cosiness was sometimes related to different stages of the space's development or specific design features. Before the new imitation parquet floors were installed, for example, a trio of students I interviewed felt that the Media Hub, in its earliest iterations, actually *lacked* cosiness. In response to my interview question about what the Media Hub might be lacking, the students responded:

>   S4: I thought it lacks that cosiness—
>   S5: Yeah.
>   S6: Yeah.
>   T: Uh-huh.
>   S4: It's just table and chairs, and—
>   T: <laughs>
>   S4: —white walls and—
>   S6: —Yeah, there's no colour-—
>   S4: —has no feel to it. It doesn't appeal to me.
>   S6: <laughs>
>   T: Yeah.
>   S6: Yeah, it's, for me there's no quite [sic] colours, I, well, it's the classic grey.

Here, the implication is that the lack of colour—the greyness—hinders this feeling of cosiness, although S4 went on to say that she finds the top floor of the Media Hub cosier, a point S5 took over and explained was because more light from outside comes in—a result of the pattern LIGHT ON TWO SIDES OF EACH ROOM. Still, as demonstrated in the first section of this chapter when I discussed the pattern WARM COLORS, the point is that the patterns are interwoven; they support one another to create the pattern language, which is akin to Barrett et al.'s (2015) findings that no single factor in the built environment has a significant correlation with improved learning outcomes; instead, the authors argue, it is the *combination* of factors that results in any statistically relevant correlation with improved learning outcomes.

Hertzberger (2008) argues that "what counts nowadays is that the children feel at home and at ease and experience the school as a large house" (p. 74). Like many other students, S14 used the word "cosy" to describe certain areas (CORNER SPOTS, for example) of the Media Hub, or to compare these areas with other places in which she liked to be or work. In the following extract from our interview, she connects the experience of working in the Media Hub with working at home—as some other students did—and to associated feelings of comfort or cosiness. Here, I had just asked her what the word "cosy" makes her think of or feel:

> Well, I don't know, you feel more comfortable when you're studying in a warm and cosy place. You're, yeah, most of the classrooms are really dull and simple, and it's not, well, it's not comfortable to, like, work in those kind of areas.

Her response, in addition to being a condemnation, in general, of our classroom spaces, also shows how students can connect productivity ("studying") with comfort; that is, a perception of the learning experience as it relates to a perception of place, of *being* somewhere that has meaning. It is little surprise, then, that the concept sketch (vision) for the downstairs area looked as it did. Overall, the students' responses to the Media Hub reveal an awareness of how space can influence their experience of learning, such as with the francophone students, discussed in chapter 6, who saw themselves as serious learners who do not sit in fun chairs. Crook (2002), for example, reported students having a similar keen awareness or perception of what learning should look like, for, in a survey of university students using networked learning, nearly half the students found this learning approach incongruent with what they viewed as the nature of learning.

"Their own little space"

International school students, who are often TCKs, likely have particular expectations of what learning looks like, and what a learning space should look like, based on their previous educational experience, which for many students could be several different international schools in several different countries. For these TCK students, how a learning space should look will be in the context of their experience in such international schools. These schools, as I have argued in this thesis, can be understood as spaces of privilege offering Western-driven international curricula like the International Baccalaureate, with class sizes rarely exceeding 24 students. In other words, students' expectations of what classrooms and learning spaces should look like are likely bound up in this experience of privilege. Perhaps their experience of learning and perceptions of place cannot be untethered from the TCK experience of international school spaces of privilege. Or perhaps the students' responses to the Media Hub are simply universal in that students appeared to be primarily interested in having some common needs or desires met: comfort, peace and quiet, a sense of ownership, and a feeling that the classroom or learning space is enchanting—maybe even cool.

Perceptions of place in the context of the Media Hub sometimes appeared to be bound up with how much time one spent in the space, in particular for those students who had timetabled IT classes there, suggesting that perceptions of place were connected more closely with their identity as IT students, and not necessarily as third culture kids. A number of IT students displayed or reported a sense of attachment to the Media Hub. S8, one of my Year 10 Video & Animation students, reported that any attachment to or sense of belonging in the Media Hub was just because the students were regularly there. He also told me that he used the Media Hub outside of class time because it was for IT students, "for us," as he put it, which suggests that he primarily identified with the space in the context of why he was usually there—for the Video & Animation (IT) course.

In an informal discussion (17 Jan 2014) with another student who had timetabled Video & Animation courses in the Media Hub, S13 made the following observation about how he and his classmates used the space:

> S13: You know, the students really have their own little space.
> T: Ok.
> S13: And that, I, I, I don't know if you noticed this, but always every time people make their own little space when they come to the Media Hub.

It is interesting how S13 goes from noting how students "have their own little space," suggesting a kind of attachment or ownership, to how students "*make* [emphasis added] their own little space when they come to the Media Hub," suggesting a stronger sense of ownership. This act of making one's own space implies empowerment, a possible way to negotiate power in the context of a learning space. At the same time, S13 was speaking in the context of the PODS configuration, not the Media Hub's earlier horseshoe configuration which did not offer the same opportunities for a sense of spaciousness and freedom.

Caution is necessary with this interpretation, though, because S13 was in a Video & Animation class that I taught which had only around eight students, and the large dimensions of the Media Hub allowed for the creation of distinct learning zones (underpinned by patterns), resulting in the reduced density and increased sense of spaciousness. In short, students had plenty of space from which to choose to *have* or *make* "their own little space." Both the size of the classroom and the few students there also very much reflect the privilege that a private international school can offer, so the response to the built environment or spatial configuration, and the aesthetics of the room, is very much bound up with the sociomateriality of the space. With fewer students in this space of privilege compared with what one would find in a state school, for example, we could expect feelings of overcrowding to be less prevalent; or, a teacher theoretically would be able to circulate more easily, with the potential to visit all students for individual help, which could have implications for the kind or quality of learning that happens; also, with more physical space, students hypothetically would be able to move around, without disrupting others, and this movement would not appear like a challenge to a teacher's authority and control of student activity. In short, the materiality of the Media Hub cannot be detached from the fact that it is a learning space that is ultimately a space of privilege, itself nestled within the larger transnational capitalist class space or assemblage.

A final and striking example of how students seek out their own little space, and perhaps feel at home, occurred one day in 2013, a month after I had observed the female student who had curled up in the Ikea chair, mentioned earlier. This same student and another female student had come to my office once again to ask me to unlock the Media Hub so that they could work downstairs. Not too long after, I went to see how they were using the space. As I descended the stairs and had a first glimpse of the comfortable *downstairs* CORNER SPOT through the

stairwell railing, I saw that one of the students, the repeat visitor, had turned the entire area into a bed by removing all of the Ikea chair cushions, laying them flat together in a large square in the middle of the circle of chairs. I was shocked by her *very* informal use of the space; I could only view it as an improper use of the space and told her so, commanding her to replace the cushions immediately. Later, I felt a bit guilty for reprimanding her, for here was a student who was, like any teenager, just a little tired (the school day for senior students runs from 8:15 to 16:50).

Her unorthodox use of the space, however, suggested a sense of ownership; or, maybe because it did not look like a traditional classroom, she felt she could operate outside of normal behavioural expectations, what Foucault (1977/1995) calls the *normalisation* of the individual through control and discipline, an idea echoed in Rivlin and Weinstein's (1984) point about concretizing behavioural norms in schools, as discussed earlier in this chapter. A likely contributing factor to her actions, of course, was the mere fact of her being downstairs, an area where there was no direct teacher surveillance. Perhaps, then, a sense of empowerment also arises from no longer being under the panoptic gaze of the school. Her act, somewhat similar to one made by the IT students who "make their own little space," also points to the value students might put on having *any* power over what might feel like their own space.

Her highly original and personal use of the space also calls to mind Massey's (2005/2014) point that

> What space gives us is simultaneous heterogeneity; it holds out the possibility of surprise; it is the condition of the social in the widest sense, and the delight and challenge of that. (p. 105)

Certainly, I was surprised by the student's reconfiguration of the space. (Upon reflection, it was delightfully novel.) The student's "social" act was also evidence of how this particular space, this region, offered her a sense of place, especially in how she transformed it to suit her personal needs at that moment. In the context of a direct experience of place, Relph (1976/2008) argues that what matters is that "*this* place is uniquely and privately your own because your experience of it is distinctly personal" (p. 37, emphasis in original). No other students had reconfigured the space in this manner, as far as I knew. My response to the student's unique and "distinctly personal" use of the space, to draw on Relph's (1976/2008)

quotation above, also demonstrates how teachers have the power to control student movement and behaviour: how they use a space, how and when they sit or stand—or how they attempt to reconfigure a space in a personal manner. I am sure that much of my response to the cushion episode—my annoyance—arose from the fact that she was not using the space as *I* had intended it to be used. *My* vision for the space did not include Massey's (2005/2014) "simultaneous heterogeneity."

Conclusion

This chapter began with a look at users' responses to the Media Hub's appearance, with a focus on colour, light, and modernity. The space also had something of a *cool factor*, a theme that emerged in the data as a not-infrequent student response to both the overall feel of the Media Hub and some of its specific design features. Along with the warm flooring, the introduction of the red chairs brought some well-received accents of colour. Of course, colour should be considered as just one of many factors of the built environment that can impact students' experience of learning and perception of place, for any perception of the effect of colour, as Alexander et al. (1977) argue, will depend on the quality of the light, its warmth or chromaticity, in the space.

Next, the chapter examined the PODS pattern. Like the CAMPFIRE, CORNER SPOTS, and IDEAS WALL, the PODS pattern represented or underpinned the creation of a distinct learning zone. These learning zones contributed to reduced density, so students could move about, visit others, and work in different zones with greater ease or freedom. The result, in contrast with other classrooms on campus, was an overall sense of spaciousness in the Media Hub for many users. The PODS pattern also aligned with productivity, facilitating what seemed like a preference for communication and collaboration as part of the learning process or students' preferred experience of learning.

Next, the chapter examined the significance of the downstairs region, which students also associated with productivity; however, comfort emerged as a key experience of being in this region, especially the *downstairs* (comfortable) CORNER SPOT. For students, comfort and productivity were not mutually exclusive. Comfort or cosiness also appeared to be a possible factor contributing to students' perceptions of place. In order to examine how design and spatial configuration might influence students' perceptions of place, I used a student's artistic

vision for part of the downstairs region to frame the analysis. This vision aligned well with the reason that a number of senior students already regularly sought out this space: its overall quiet and comfortable atmosphere, ideally suited for independent study. It should be added that the quiet atmosphere was not solely because of the Media Hub's spatial configuration, for the downstairs region surely benefitted from its distance from noisy hallways and standard school activity.

Some students in the Video & Animation courses displayed a sense of attachment to, or ownership of, the Media Hub, likely because they had regularly timetabled lessons in the space. These perceptions of place (attachment, ownership), however, could have been influenced by smaller class sizes, a privilege of international schools. Still, the findings in this chapter suggest that design choices, for local transformation projects, do have significance for students' experience of learning and perceptions of place. Of course, students and teachers can have different views of how a classroom or learning space should be configured, and what learning looks like in that space. Moreover, students and teachers in an international school will draw on their own different cultural and educational backgrounds, their different or preconceived notions of what a learning space should look and feel like. Educators therefore should be mindful of the role culture and practice play when considering how to transform a learning space, and how such social forces assemble with the design features—or patterns—of a learning space.

Chapter 9: Conclusions

The Media Hub project embodied a collaborative approach to a learning space transformation, one that put spatial decisions in the hands of teachers and students, drawing on the support of colleagues in technical services and administration. In the wider context, this small-"t" transformation of a unique local space could represent a counterpoint to what is, arguably, the increasing sameness of international school spaces, outwardly symbolized by iconic architecture and grand building projects. In short, the project represents valuing cosy and simple places over brash and showy spaces. Through its spatial configuration and design, underpinned by a pattern language approach, the Media Hub appeared to positively influence students' experience of learning, even offering a stronger sense of place for some. Ultimately, the students' responses to the Media Hub reinforce that students are more concerned with the everyday spaces and experiences in a school than any grand façades or iconic building projects.

The Media Hub's spatial configuration and overall design were largely informed by current research on learning space design, with a focus on features like different learning zones, movement, choice, flexibility, and student-centred learning. Inspiration, and further design guidance also came from Alexander et al.'s (1977) pattern language theory, which, as an approach to learning space design, can offer *practical solutions* for transformation projects. Patterns, while having some universal or archetypal qualities, do not represent *the* solution, but rather *a* solution, a starting point. One would then constantly revise and adapt the patterns. Because users can, and should, generate their own patterns, a pattern language approach embodies choice and freedom, characteristics of the theory that align well with the inclusiveness and empowerment that a PAR project is meant to offer. I adopted a PAR approach in order to draw on the knowledge and feedback of the people that would be most affected by the Media Hub, teachers and students. This participation offered users a sense of power over their own space, although this power was actively contested between departments and teachers, as well as between teachers and students.

A pattern language approach, or likely any concrete approach to learning space design, cannot fully account for the mutability of space and the complex ways in which people and the material assemble and re-assemble in the ongoing construction of space. For this reason, I applied a sociomaterial reading to the Media Hub's pattern language design approach. This

sociomaterial reading could be understood as a more specialized investigation of space, able to consider and interrogate issues of power, and how unforeseen and taken-for-granted objects have agency. The fragmented parts of space, or the materiality of space, might assemble and re-assemble (thus the unpredictability of space), but they assemble nevertheless in a network—not unlike patterns form a network, a pattern language. Since the sociomaterial does not look to create assemblages—or create anything at all—educators need something, an approach, to help create a space, and strive for some order that must eventually be in a classroom.

This intertwining of theories (the practical and the theoretical) could provide a richer understanding of how space is produced for, and with, a particular group of people, and tailored to their specific interests. A sociomaterial reading of space can reveal the limitations of design choices, of particular spatial configurations or other elements of the built environment, including a pattern language approach. As Sidall (2006) argues, in the context of tertiary learning spaces:

> Incremental improvements (such as better seating or room colour) neither alter our teaching practices and learning outcomes nor expand our thinking about what might be possible. (p. 163)

Although Sidall (2006) does not say if a wide range of sustained incremental improvements could result in significant changes, such as Barrett et al.'s (2015) large-scale study suggests, her point does speak to the power of entrenched teaching practice, which in international schools will likely reflect Western culture and pedagogical trends. My sociomaterial reading of the Media Hub was also instrumental in understanding how power is negotiated, how space is contested at the local level, and what that means in the wider context of TCC power as expressed through the iconicity of international schools.

Chapter 5 drew on Sklair's (2005, 2010, 2016) criticism of the transnational capitalist class (TCC), particularly its use of iconic architecture to project its power and globalising ambitions, a critical interpretation that I applied to the design of some international schools. Members of the TCC tend to have a globally mobile lifestyle (a mobility unavailable to most people), so international schools provide continuity for their children's education (usually in English). Since their inception almost 100 years ago, based on a pragmatic need and a laudable quest to foster international understanding, international schools now represent an industry, one that increasingly offers an exclusive educational experience available only to

members of the TCC or local elites. I examined the close ties that often exist between international school boards and the TCC (and its *fractions*) before turning to a close visual analysis of international school architecture and spaces. I attempted to show how international education, particularly as it relates to the ubiquitous International Baccalaureate programme, resembles an exclusive commodity, one that is branded and cross-branded across private and public spaces, both in the real world and online. Such positioning of an international education as a commodity (exclusive product) is bound up with a school's iconic architecture, an assemblage that reinforces and projects the power of the TCC. This expression of TCC power through iconicity has little if anything to do with the experiences or needs of the users of these buildings, for both students and teachers are more concerned with everyday educational experiences in everyday educational spaces. As the architect Herman Hertzberger (Wood, 2017) says:

> I think there's a lot for architects to do but I'm afraid they're going on with just making beautiful objects as if you're always outside the building looking at it. The great lesson from Aldo van Eyck is that whatever we do with architecture, whatever we create, it should always end up being more inside than before. (*This takes us back* section)

"Being more inside" means rejecting the emphasis on outward-focused architecture, or iconicity; and it means embracing the everyday spaces inside—the classrooms, corridors, nooks, alcoves, and stairwells, all of which are subject to change over time, and can easily be put at the heart of small-"t" transformation projects. One can then apply an ongoing sociomaterial reading to understand how power is negotiated in the context of such transformations, and how the social and material contribute to the ongoing construction of space. With the added layer of a PAR approach, a group of educators (and students) could continually adjust and adapt the space to address issues of power, students' experience of learning, and their perceptions of place.

In chapter 6, I looked at the competition for the Media Hub, starting from its inception (via my proposal for the space), which arose because of a one-year fallow period after which the English department's original, yet tenuous claim to the space faced numerous challenges. Given the limited space on our campus—a common drawback in most schools—it was no surprise that various departments or groups wished to claim ownership of this large and luminous space. The chapter explored how competition for the Media Hub was bound up in its materiality. As the space developed, it came to have a predominantly IT identity, largely

established through taken-for-granted material objects like posters, desktop computers, headphones, computer memory cards and film apparatuses. Still, such material claims of ownership and identity could be challenged through other objects or *things* of education, like the English books left behind on tables, or even a laptop trolley parked in the entrance. A further way to contest space occurred through presence—teachers merely booking and using the Media Hub—which played out, in particular, between the two departments (other than IT) that were closest to the space: maths and English. Further tensions arose between the intended design of the space and its actual use, which partially emerged from conflicting pedagogical perspectives.

In chapter 7, I examined the negotiation of power in the context of a few key patterns (CAMPFIRE, CORNER SPOTS, PODS). These patterns helped define or underpin different regions and learning zones within the wider space. The patterns and zones were meant to challenge the establishment of homogenous regions, or regional patterns of relations (Sørensen, 2009) as well as challenge traditional pedagogy (teacher-centred lessons). At the same time, the patterns and design features sometimes reinforced or reproduced traditional power structures, such as the teacher region associated with the CAMPFIRE at the front of the classroom; another example was how the PODS and the downstairs region were used to control, discipline, or reward students, thereby being employed in the normalisation of the individual. One the other hand, students could contest teacher power, or assert some control through elements of the built environment, in spite of the design intentions of the pattern language. Overall, though, the data suggested that these key patterns and learning zones aligned with students' preferred experience of learning, particularly features like communication, collaboration, movement, and comfort.

Chapter 8 looked at how the pattern language design influenced students' perceptions of place. I used one student's vision for the downstairs region as a framework, which helped me explore the authentic experience of a particular group of students, TCKs, in the Media Hub, especially the downstairs regions, for it offered a peaceful and quiet atmosphere that a number of students preferred. Students also demonstrated or reported a preference for a comfortable and cosy environment, which aligned well with what seemed like, for many, an overall preferred experience of (approach to) learning. I also explored how their perceptions of place—including a sense of ownership, and attachment or belonging—were influenced by the spatial configuration of this unique and local setting.

What was a strength for the thesis—the unique situation of having both the anglophone and francophone streams on our campus—also makes it harder to apply the findings here to other international schools, for they would usually only offer a single international curriculum (the IB). One must also recognise the privilege and financial advantages of international schools. Funding for such transformation projects like the Media Hub would be far easier to secure in an international school than in local or state schools, which, in fact, probably would not have *any* funding available given the recent trend for cutbacks in funding for public education in places like the United Kingdom and United States of America. Moreover, such local or state schools usually face stricter oversight with regards to planning permission and construction guidelines, and so forth. An international school, in comparison, would have greater freedom to experiment with learning space design and local and modest spatial transformation projects. Permission would not be needed from a district school board but rather just the school principal.

Reflections and recommendations

PAR is meant to be a collective endeavour that stimulates change by the people who comprise an organisation, so, in this respect, the Media Hub project succeeded, because it was a teacher-led and teacher-driven project that involved numerous participants in reflection and knowledge sharing during the space's ongoing transformation. Whyte et al. (1991/2011) argue:

> PAR also tends to extend the researchers' learning far beyond the termination of particular projects. Because PAR leads researchers into previously unfamiliar pathways, involvement in the process is likely to stimulate us to think in new ways about old and new theoretical problems, thus generating provocative new ideas. (p. 42).

The validity of the Media Hub project's PAR approach is evident in subsequent changes to the built environment elsewhere on our campus; for example, I was able to apply my learning beyond the Media Hub project by embarking on two more spatial transformation projects at my school: another classroom and an outdoor learning space. These projects incorporated and built on a number of the Media Hub's ideas (and lessons learned). More significantly, these projects—representing new ideas and pathways—likely only came to be because colleagues and the administration saw the Media Hub as evidence of the value of teacher-led spacing projects in our school. As Kemmis et al. (2014) argue, the principal concern of those

conducting PAR "is in changing practices in 'the here and now'—they want to change 'the way we do things around here'" (p. 20). Changes in the here and now continue to occur on my campus today, changes that can be traced back to the Media Hub's influence.

The Media Hub project also enabled other teachers to see their classrooms in new ways, to imagine new spatial configurations, and how these might facilitate different approaches to teaching and learning. One humanities teacher preferred the Media Hub's IDEAS WALL + interactive projector over the interactive TV screens that were scheduled for installation in all classrooms around 2015, a few years after the Media Hub's creation. This teacher wanted to fashion his classroom in a way that better aligned with his teaching practice and pedagogical philosophy. His insistence on the IDEAS WALL + interactive projector in his classroom represented a small but important act of empowerment, for he had to push back against the administration's mandatory installation of the interactive TV screens, eventually convincing them. Later, other teachers began asking me to help them transform their classrooms (and they still ask me now), for they did not know where to start, or how to go about it themselves. (I address this lack of knowledge or know-how further below).

Part of the Media Hub's legacy, and once again evidence of its successful and robust PAR nature, was its continued impact on other learning spaces in the school, sometimes long after the project ended. The pattern IDEAS WALL found its way into a few classrooms in two other buildings on campus starting around 2014, initially installed at the demands of a couple teachers who had seen or experienced the value of this pattern in the Media Hub. Later, the campus facilities team, adding their experience and expertise, developed a way to create an improved and cheaper iteration of the IDEAS WALL, still another example of PAR in action. By 2019, several classrooms in other buildings and nearly every classroom in the Media Hub building (maths and English departments) had an IDEAS WALL. Moreover, the acoustic panelling installed on the Media Hub ceiling was soon added to the ceilings in the foyer outside the Media Hub, then later to all the hallways in the building, the reception area, as well as a few other learning spaces on campus that were particularly noisy or reverberant. To remind, I had argued for this acoustic dampening in and around the Media Hub, based on my research, but this change was realised only through the knowledge, skill, and expertise of the campus facilities team and the campus manager, who brought in an outside acoustics professional to take measurements and suggest solutions, one of which was the ceiling acoustic panels.

Even some liminal spaces, just like the foyer outside the Media Hub, were transformed. A maths teacher, inspired by the Media Hub, ordered and installed modern and comfortable furniture in two foyer spaces on campus, evoking the PODS and CORNER SPOT patterns, and emulating the standing high tables, all of which were first used in the Media Hub. So, when Tondeur et al. (2017) wonder whether enough is being done to "cultivate and make use enough of the teachers' potential to make and manage their teaching and learning environment" (p. 293), one need only look to the impact of projects like the Media Hub and its PAR approach.

Educators wishing to embark upon their own small-"t" transformation must remember that there will always be unexpected twists and turns as the space develops, including questions of ownership, and ongoing negotiations of power. Without a champion for the project—which I was for the Media Hub—things can fall apart. In the context of the PAR approach, my role was initiator of the project (the overall concept) and lead researcher, which, it can be argued, represented an outsized role or influence. Although Craig conducted online research on learning spaces, such as investigating the merits of spacing projects in other schools, I was the only person who conducted academic research within the literature on learning space design, sociomaterial theory, and pattern language theory. As such, I was driving many of the pedagogical arguments, bringing new ideas and perspectives to Craig and other teachers, which they could in turn reflect on and critique as part of the PAR framework. I still wonder if my ideas and perspectives were at times biased, too prescriptive. After stepping away from the project and looking back at the data and overall experience, I began to see how Craig and I, with the principal's approval, had embarked on a project that imposed pedagogical and epistemological ideas on colleagues that they could question sometimes only *after* things had been set in motion or the spatial configuration had been altered. Although being the initiator and champion of the project carried a certain power, my two-year absence (sabbatical) meant that my power dissipated and, finally, disappeared. Or rather, one might argue, it was merely transferred to others. With the project's champion gone, the IT department (represented by two actors in particular, in a department of only three people after my departure) began the process of claiming the space solely for IT.

The Media Hub's iterations and shifting power highlight the fluidity of space, its ongoing potential for change and surprise. One thing is certain, the Media Hub's patterns and overall pattern language were not stable, a reminder of the value of viewing learning spaces and

spatial transformation projects through a sociomaterial lens. The pattern language was a concrete starting point. Some patterns, like the CAMPFIRE and PODS persisted, and were used—often—as intended; but at other times, as highlighted in my data chapters, a drift or translation occurred, for the patterns were used in unexpected and unintended ways, perhaps for disciplining students or for resisting the panoptic gaze of the teacher. This understanding of space, however, needs to be available to more teachers. Teacher training and later professional development could represent ways to introduce teachers to the concept of a sociomaterial reading of learning spaces in general, and an interrogation of a pattern language design approach specifically.

In a robust literature review on the impact of school environments, prepared for the UK's Design Council, the authors conclude: "Environmental considerations should be embedded in teacher education and in school management training, so that these important elements are not relegated to the 'background noise' of educational discourse" (Higgins et al., 2005, p. 37). More tertiary institutions could emulate Queensland University of Technology's (Australia) Master of Education programme, for example, which, since 2005, has included a unit of study called "Designing Spaces for Learning" (Hughes & Burns, 2019, p. 187). With respect to international schools and ongoing professional training, there is scant evidence of similar training. The New England Association of Schools and Colleges (NEAS&C, 2020), an influential accreditation body for independent schools, oversees a lengthy and in-depth self-study process for member schools, but this self-study includes nothing specific about learning space design or its sociomaterial implications. Instead, the self-study simply covers general descriptors for a safe and healthy campus (*Standards – 20/20 Process for Independent School Accreditation* page). An opportunity exists here for these self-studies to consider in detail how the built environment of a school is bound up with learning and well-being, which might encourage more teacher training and professional development in this area. Teachers in my school, for example, who did not know where to begin with improving and transforming their own classrooms, might choose to go on a training course for learning space design, or join an international school conference that covered sociomaterial perspectives in education, maybe even as they apply to learning space design.

As Higgins et al. (2005) note, "There is strong, consistent evidence for the effect of basic physical variables (air quality, temperature, noise) on learning" (p. 22). If the built

environment can influence learning or learning outcomes, or influence the well-being of both staff and students (with implications for students' experience of learning), well-funded private and international schools will have a distinct advantage over state schools. Or a particular international school in one city or local region might have an advantage over its competitor across town, perhaps bound up in a new, and iconic, large-"T" transformation project. One can imagine a future scenario in which the collection and targeted use of data relating to the learning environment would only inflate the already outsized advantages of private international schools. What is more, such schools would conceivably be able to design (afford) classrooms that greatly exceed minimum industry standards for health and well-being as relates to the built environment.

Real-time measurements of such environmental factors are increasingly possible, theoretically providing data that could inform ways to counter negative environmental factors. One example is a new device released in January 2020 called the "Learnometer" (Gratnells, n.d.), a clunky name that evokes Biesta's (2009) term "learnification," which he describes as a "deliberately ugly word" (p. 38) meant to draw attention to its meaning and import. The Learnometer measures the environmental factors that Higgins et al. (2005) list above, as well as ambient light, in real time. This data can be viewed, charted, and compared across time and against different classrooms. Since the device currently costs £350, few state school boards could afford a suite of them, let alone one or two, when that same money might be needed to purchase much-needed books, or fix broken lights. Even if one classroom in an international school is found to be deficient in these environmental parameters, perhaps nothing can be done about it because resources have already been allocated elsewhere; however, with implications for learning and even learning outcomes, teachers and students might not want to be in a particular classroom if the Learnometer data suggested their classroom was substandard; parents would not want their children to be in this substandard classroom; teachers might contest or hold onto prized classrooms, or demand to be timetabled in the "best" classroom as suggested by the data. If parents were to perceive a potential disparity in learning caused by the built environment of a particular classroom, they might demand that their child be switched to the "superior" classroom. (One could even imagine, in the context of fee-paying private schools, parents asking for a discount in school fees because their child was forced to remain in an inferior learning space.)

Obviously, there is no such thing as a perfect classroom. Teachers and students—humans—will always be imperfect, so any notion of a perfect classroom would have dystopian overtones. Tondeur et al. (2017) question if "we are not too preoccupied with creating the perfect 'learning' environment and neglecting that it is simultaneously a 'teaching' environment which should strengthen the talents of the teachers" (p. 292). And even if one *could* design the *perfect* learning environment, it would "not by itself guarantee better learning results. Rather, it is one contributing factor among many others such as the students' cognitive ability, motivation and personality, as well as social conditions at home" (Walden, 2015, p. 91). One can design a classroom informed by, or aware of, evidence in the literature, but there is no *best* classroom just like there is no *best* practice. Anything approaching best is merely so only for a particular context, maybe even only for a particular lesson on a particular day. Myriad factors constitute the everyday experience of teaching and learning in a classroom, and how that experience influences a student's motivation. While a perfect or ideal learning environment cannot exist, there is ample evidence in the literature on learning space design to suggest that the built environment can be adjusted or improved, especially given the right resources, which might confer further advantages upon wealthier schools and their *clients*, whose children are, arguably, some of the most advantaged or privileged students anywhere.

Future research

A number of interesting avenues of future research exist that could build on the approach and focus of the Media Hub study. More and more educators and researchers recognise or study the impact of the built environment on learning, which can even extend to neuroscience in order to provide a "greater understanding of human responses in complex sensory situations" (Barrett & Barrett, 2010). The addition of acoustic panels in the Media Hub, for example, dampened sounds and reduced the previously elevated decibel levels in the space. Noisy learning environments and reverberant classrooms can impact the experience of learning, learning outcomes, social relations, and well-being (Klatte, Hellbrük, Seidel & Leistner, 2010). Well-being, then, as a broad experience of the built environment, represents a promising avenue of future research in the context of small-"t" transformations like the Media Hub. One might examine more closely how specific design choices impact the well-being of both students and teachers. A pre- and post-transformation comparison should yield interesting data on how teachers feel in a space, and how that response to the built environment influences pedagogy, social relations, and well-being. With implications for

students' experience of learning, place, and even performance, well-being represents a promising research avenue because many international, and even state schools (in the Western world), are increasingly concerned with the notion of student well-being, indicated at least by the proliferation of mindfulness programmes.

Another avenue of future research might be to examine student and teacher responses to a new large-"T" transformation project in an international school in order to see what value or sense of place such a building might hold for users as time passes (once initial excitement wears off), ideally in comparison with the previous building they occupied. With a focus on students' perceptions of place, this research might collate several post-occupancy evaluations of new school buildings and compare them with small-"t" transformation projects, like the Media Hub, that also consider students' perceptions of place in a local setting. In fact, a more detailed investigation of TCK's perceptions of place that incorporates a stronger phenomenological approach, which was beyond the scope of this thesis, represents promising future research for better understanding the needs of globally mobile students. This phenomenological focus could still examine how spatial configuration and a pattern language design approach influence students' experience of learning and perceptions of place.

The small size of the Media Hub study, while an advantage in some ways, ultimately limits the wider applicability of the findings and conclusions of this thesis. More small-"t" transformation projects like the Media Hub are needed, but they might benefit from drawing on a wider range of participants who could be interviewed at several key stages (iterations) of the space's transformation. One particularly interesting approach would be to study a "regular" classroom transformation, something subject specific, perhaps a space that only one teacher uses. The Media Hub, in contrast, was a space that was shared across departments, and much larger than most classrooms. Students' experience of learning and perceptions of place in a subject-specific classroom, used by only one teacher or department, might differ from the findings of my study. Still, the framework of a regular classroom transformation could be the same—applying a sociomaterial reading to a pattern language design approach.

A final area for future research would be contingent on increased (or the introduction of) teacher training in the area of learning space design, whether this would happen in teacher education programmes at university, or through workshops at education conferences, or as part of continuing teacher training (workshops and courses) offered at the local level. With

respect to international teachers, such training might be offered through the International Baccalaureate or an accreditation group like the Council for International Schools (CIS). Further research, then, could examine how this new awareness and knowledge of learning space design impacts teachers' involvement in school transformation projects. Perhaps having this greater knowledge—an enhanced pedagogical understanding of the impact of the built environment—would empower teachers to take part in decisions about spatial changes at their schools, providing more opportunities to lead projects as I did with the Media Hub. Such meaningful participation in modest, small-"t" transformation projects have immense value with respect to a sense of ownership or buy-in (Tondeur et al., 2017; Horton & Kraftl, 2012). Of course, this future research would also need to discover if such teacher training would have much impact at all, given that administrators still make the key decisions about spacing in a school (in spite of little or no evidence showing that administrators have been trained in, or have studied, learning space design). It would also be interesting to study how this learning space design training for teachers influences teaching and learning in their own classrooms, especially if sociomaterial perspectives are applied.

The possibilities of space

Learning spaces can and should be full of vitality, aesthetically pleasing, inviting, and even enchanting. Although many (maybe even most) learning spaces do not meet these criteria, international educators and school communities need only make a few small and incremental changes to transform these spaces, while foregrounding students' experience of learning and perceptions of place. The Media Hub project shows the value for teachers—and students—of a PAR approach to a local transformation, how it offers a sense of agency, empowerment, and ownership. This expression of power is important in the context of the broader power behind international schools and their ties to the transnational capitalist class (TCC). An increasing emphasis on iconic architecture, as a projection of TCC power, risks ignoring the value of local transformation projects. What seems to matter more and more is the appearance (through iconicity or monumentality) of the building itself, an attitude towards architecture sardonically conveyed in a drawing titled "Recommendation for a monument," from the seminal architectural text *Learning from Las Vegas* (Venturi, Scott-Brown, & Izenour, 1977):
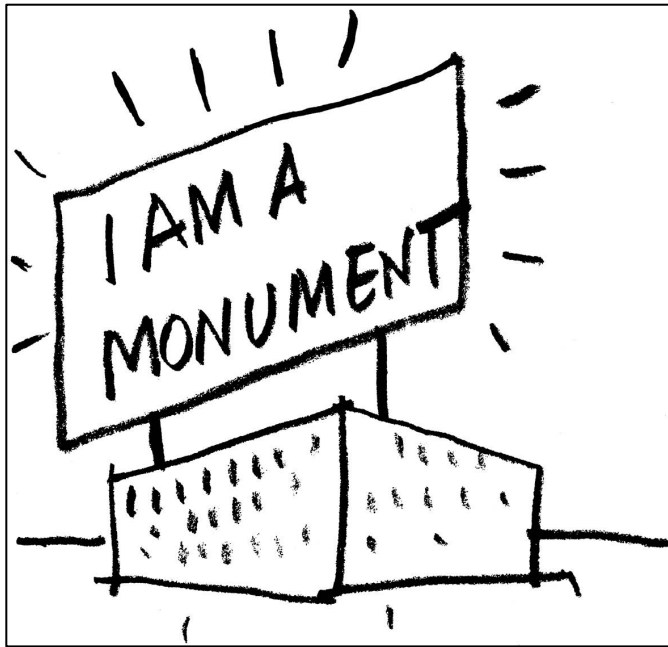
Figure 82. "Recommendation for a monument" (Venturi, Scott Brown, & Izenour, 1977). Image source: http://sites.ap.buffalo.edu/course/arc-486lec/ (University at Buffalo).

Iconic building projects for international schools, indirectly funded by multinational corporations, nudge us further towards the commodification of international education—and maybe all education, as Wood (2015) worries, noting the "tone of inevitability" (para. 3) in the following quotation from Hawkins\Brown, a UK architectural firm:

> As schools behave more like private businesses they will be in competition with one another to attract the best teachers and students. Architects can draw on their experience in the private sector to help them achieve this. (Hawkins\Brown, 2015)

Wood (2015) also highlights the worrying link between the UK's then-conservative government's "Great Schools" initiative and both "an established architecture firm and a leading Architecture magazine," Hawkins\Brown and *Architects' Journal* respectively. Although such a link is indeed worrying, and perhaps representative of a growing trend, it is hardly surprising in light of Sklair's (2005, 2010) criticism of iconicity and his argument that the TCC desires to turn all space into consumer space. The consumer product on offer is an exclusive education in a space of privilege, part of an assemblage that includes branding and iconicity. Hallgarten, Tabberer, and McCarthy (2015) warn:

> Without a broader social mission, international schools may face increasing criticism for super-serving elite young people, further concentrating various forms of capital, and reinforcing national and global inequalities and social immobility. (p. 13)

While a broader social mission is obviously crucial, international schools should also look beyond building projects that focus on fame, symbolism, and aesthetics, the three essential qualities of iconicity, according to Sklair and Struna (2013).

Instead, these schools should look more within their buildings, turning their focus to transformation projects that enhance the everyday spaces of education—the classrooms and corridors, alcoves and corner spots—that can influence students' experience of learning and perceptions of place. As Relph argues (1976/2008),

> A deep relationship with place is as necessary, and perhaps as unavoidable, as close relationships with people; without such relationships human existence, while possible, is bereft of much of its significance. (p. 41)

Although international school families and their children seek some degree of familiarity in order to ease transitions after a move to a new country and school, and although research suggests that TCK students tend to create a sense of identity through identifying with other TCKs, the Media Hub project suggests the importance of creating unique learning spaces that can influence students' perceptions of place. In this respect, perceptions of place—from attachment to ownership—could have particular importance for TCK students, and merits future research, as discussed above.

The TCK experience usually revolves around a globally mobile life, whereby they might attend several international schools in their lives. This mobility—what might also be understood as a sort of displacement that is a consequence of parental choices—has both benefits and drawbacks, of course. Relph (1976/2008) argues that "mobility provides exposure to diverse cultures and places that comprises an enrichment of experience and can help to undermine parochialism and narrow-mindedness" (preface). And yet, perhaps there is, ironically, a parochialism about international schools, for although the student body is represented by families of diverse cultural backgrounds, they tend to be children of globally mobile members of the TCC. The culture of international schools can be understood as monocultural in that it is largely composed of third culture kids, the children of parents who represent the *technical* (professional) fraction of the TCC. The various cultures of an international school can become subservient to the overarching global ambitions of the TCC. Also, although international schools exist in far-flung places of the world, they are isolated islands of TCC privilege, often unconcerned with the democratisation of education at a local

level. International schools do represent a pragmatic solution for globally mobile parents, providing continuity of education, usually in English, for their children. A sameness in curriculum and a general air of familiarity in culture or even design can be expected, especially considering that the educators in these schools often become globally mobile themselves, and bring familiar professional experiences to each new teaching placement.

Of course, there is nothing inherently wrong with international schools attempting to provide, in general, continuity or a sense of the familiar for globally mobile families, a provision which might help TCK students integrate after another transnational move; however, an increasing universality of design and a trend for iconic buildings pushes such spaces of privilege towards becoming non-places, mere extensions of the consumer spaces of the TCC globalizing agenda.

A focus on iconic architecture for international schools also positions these spaces of education, in a way, as utilitarian in that their purpose is to symbolically serve the ambition of the TCC by projecting power and status. Large-"T" transformation projects, often in the international style of architecture[19], represent a turn from authentic spaces and simultaneously a step towards a kind of placelessness reminiscent of airports and train stations and shopping malls, where space has little if any possibility for us to contribute to it. Placelessness, to return to Relph's (1976/2008) definition, is "the casual eradication of distinctive places and the making of standardised landscapes that results from the insensitivity to the significance of place" (p. ii). A local transformation project, on the other hand, very much represents a sensitivity to the significance of place. In contrast, iconicity and a bland familiarity in design might also contribute to the creation of spaces of isolation. An iconic international school, in spite of being physically located in a given local community almost anywhere across the world, is separate from the local community because of the exclusive education (product) on offer within, resulting in a space of exclusion, a kind of alienation. As Hertzberger (Wood, 2017) argues, because of the poor design of spaces, "We're fighting alienation all the time" (para. 16). His solution, achieved through design, is to give people freedom, to empower them. A building, rather than being a mere apparatus, according to Hertzberger, is like a musical instrument, "a thing that incites you to put your own ideas into it" so that one might adapt to the changing nature of space. A pattern language, as a design tool or instrument,

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[19] Glass, concrete, modernist lines

incited us to put our own ideas into the Media Hub, specifically to address students' experience of learning and perceptions of place, yet also generally to create a welcoming and inspiring space, one full of vitality.

The Media Hub is not meant to be *the* template for other ICT classrooms, nor is it *the* ideal ICT learning space; but it need not be. It is merely meant to show what is possible. Other schools considering spatial transformation projects must develop their own pattern language to suit their unique circumstances. Hertzberger (2008) also argues:

> Indeed, space is more than ever a means of showing pupils and especially teachers what the possibilities are, of inspiring them and opening itself up to changes and increments. (p. 70)

This quotation captures the value of the Media Hub project, a local transformation project that showed students and teachers the "possibilities" that an authentic space can provide, as achieved through the flexibility and infinite possibilities of a pattern language approach.

There is also something of the sociomaterial in Hertzberger's quotation above, such as the changing nature of space, and incremental changes (which can be addressed through a PAR approach, of course). As the data revealed, patterns and other design features, even when supported by contemporary research, did not always succeed as intended, for space will always be open to contestation or disruption. Where the Media Hub truly did succeed, then, is in how it showed students and teachers the possibilities of what a learning space can be, the value of a collaborative approach to learning space design, and how students' experience of learning and perceptions of place can align with spaces of comfort, enchantment, and vitality. In this sense, the Media Hub might offer inspiration not only as a learning space itself but also for the design of other learning spaces at my school or beyond. Still, educators should be mindful of the role culture and practice play when considering how to transform a learning space, and how such social forces can become bound up with the design features or patterns of the built environment. Tensions between intended and actual use therefore seem inevitable, a reminder of how space is co-constructed by the social and material.

Finally, I look once again to Hertzberger (2008), who captures the essence of one's own school memories, and, unsurprisingly, these memories have nothing to do with the building's façade or iconicity:

> The things you recall best of your own school are the classrooms, the corridors, the stairs, the windows you looked out through, the space, the materials and perhaps the attic full of old stuff where you had no business being. (p. 9)

Or perhaps the cosy downstairs region of the Media Hub, the place where you made a bed out of chair cushions, which you had no business doing.

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Appendix A: Patterns

Summaries of some patterns from *A Pattern Language* (Alexander et al., 1977):

TAPESTRY OF LIGHT AND DARK (p. 646)

> Create alternating areas of light and dark throughout the building, in such a way that people naturally walk toward the light, whenever they are going to important places: seats, entrances, stairs, passages, places of special beauty, and make other areas darker, to increase the contrast.
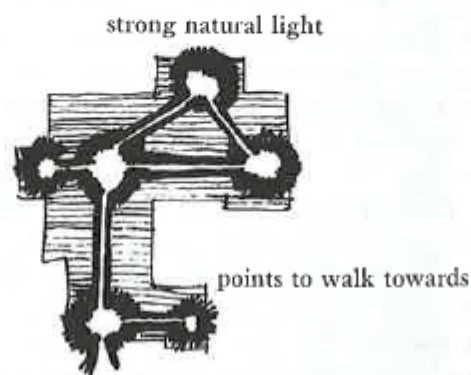

SMALL WORK GROUPS (pp. 702-704)

> When more than half a dozen people work in the same place, it is essential that they not be forced to work in one huge undifferentiated space, but that instead, they can divide their workspace up, and so form smaller groups…Arrange these work groups so that each person is in at least partial view of the other members of his own group.
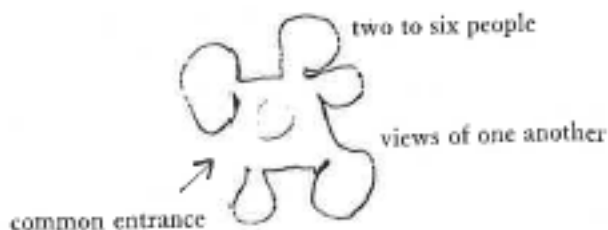
LIGHT ON TWO SIDES OF EVERY ROOM (p. 750)

Locate each room so that it has outdoor space outside it on at least two sides, and then place windows in these outdoor walls so that natural light falls into every room from more than one direction.

each room has light on two sides
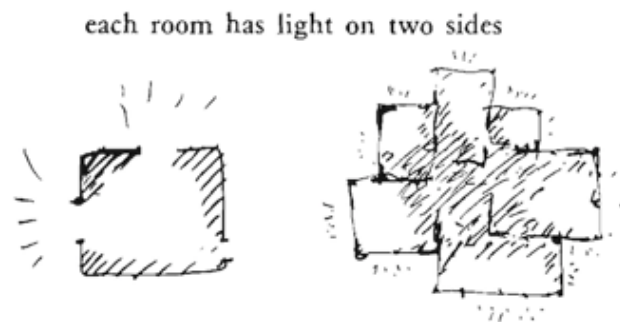
ALCOVES (p. 832)

Make small places at the edge of any common room, usually no more than 6 feet wide and 3 to 6 feet deep and possibly much smaller. These alcoves should be large enough for two people to sit, chat, or play and sometimes large enough to contain a desk or a table.
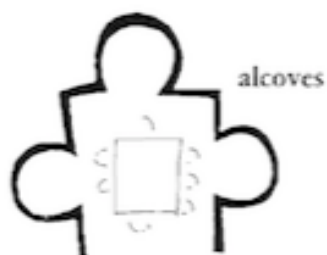
alcoves

WINDOW PLACE (p. 836)

A glazed alcove. The most elaborate kind of window place: almost like a gazebo or a conservatory, windows all around it, a small room, almost part of the garden.

A glazed alcove.

And, of course, there are other possible versions too. In principle, any window with a reasonably pleasant view can be a window place, provided that it is taken seriously as a space, a volume, not merely treated as a hole in the wall. Any room that people use often should have a window place. And window places should even be considered for waiting rooms or as special places along the length of hallways.

SITTING CIRCLE (p. 859)

Place each sitting space in a position which is protected, not cut by paths or movement, roughly circular, made so that the room itself helps to suggest the circle—not too strongly—with paths and activities around it, so that people naturally gravitate toward the chairs when they get into the mood to sit. Place the chairs and cushions loosely in the circle, and have a few too many.

away from traffic

extra chairs

rough circle

loose overcrowded arrangement

WINDOWS OVERLOOKING LIFE (p. 892)

In each room, place the windows in such a way that their total area conforms roughly to the appropriate figures for your region (25 per cent or more of floor area, in the San Francisco Bay Area), and place them in positions which give the best possible views out over life: activities in streets, quiet gardens, anything different from the indoor scene.

25 per cent of floor area or more

views over life
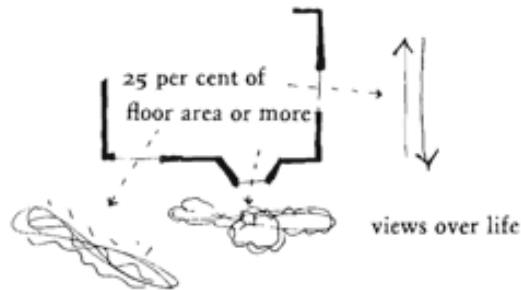
WARM COLORS (p. 1156)

Choose surface colors which, together with the color of the natural light, reflected light, and artificial lights, create a warm light in the rooms.

warm light

yellows

reds

oranges

and browns
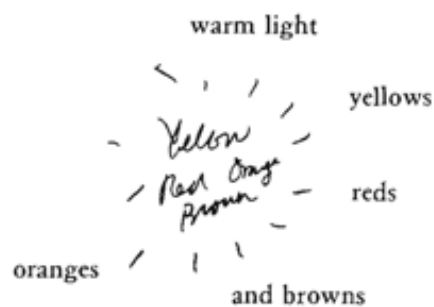
DIFFERENT SIZED CHAIRS (p. 1159)

Never furnish any place with chairs that are identically the same. Choose a variety of different chairs, some big, some small, some softer than others, some rockers, some very old, some new, with arms, without arms, some wicker, some wood, some cloth.
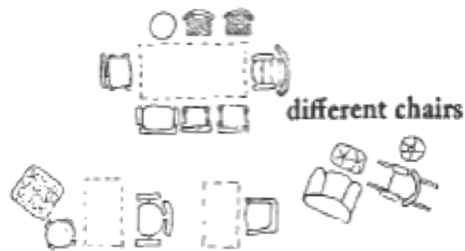
different chairs

POOLS OF LIGHT (p. 1162)
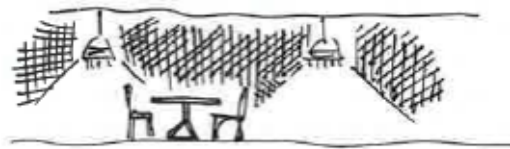
Light pools at odds with social space.

Therefore:

Place the lights low, and apart, to form individual pools of light which encompass chairs and tables like bubbles to reinforce the social character of the spaces which they form. Remember that you can't have pools of light without the darker places in between.

pools of light

Appendix B: Booking data

Number of periods (of 45 minutes) timetabled per week for two of the first four academic years of the Media Hub. Figures were unavailable for two of the years.

Department	2012-13	2013-14	2014-15	2015-16
ICT	?	15	?	16
English	?	4	?	10

The following table provides the number of periods (of 45 minutes) booked by maths and English, the two departments with the highest number of bookings. The table also provides the top three most frequent users of the space in each of these departments for comparison:

Teacher	Dept.	2012-13	2013-14	2014-15
Charles	Maths	37	46	13
Adrian	Maths	11	19	24
Francesco	Maths	11	24	8
Dept. Total	**Maths**	**98**	**150**	**99**
Weekly Avg.	Maths	2.8	4.3	2.8
Roger	English	41	64	14
Archie	English	0	78	25
Me	English	16	23	N/A
Dept. Total	**English**	**142**	**256**	**98**
Weekly Avg.	English	4	7.3	2.8

Appendix C: Pattern language for the Media Hub

"Pattern Language for a Collaborative ICT Learning Space - The Media Hub"

PATTERN	Description	Pattern Present or effective? (My Reflections)	Feedback and Reflection Darren's feedback
1. CAMPFIRE GATHERING (aka SITTING CIRCLE**)	-use of poof cushions in a circle by whiteboard; used for brief discussion and presentation; brings class together as a PRESENTATION AREA; also functions as a SMALL GROUPS WORK AREA on COMFORTABLE CHAIRS	YES - often a starting point for classes, as well as a way to re-group for discussion mid-task, or to review and close a learning event/class	YES I have found that I use the cushions every lesson as it creates interludes during class and moments of emphasis - the students now know that when we go into a huddle it is to either be given a piece of information, to discuss and assess a project or task or to be given a brief for a new task.
2. IDEAS WALL	-standing zone for brainstorming, planning; individual or SMALL GROUPS WORK AREA	YES - but to what extent is it being used now? At first, limited use. Why?	YES & NO - The students like using it, but I do have to push them towards using it. Also, because it is a whiteboard anything they do on it is seen as temporary so they feel that it is strictly a brainstorming rather than a production planner.
3. POOLS OF LIGHT*	-help focus the social activity for a SMALL GROUPS WORK AREA, QUIET CORNER or INTIMATE STUDY AREA. These lights could include DESK LIGHTS** or LAMP HANGING LIGHTS	PARTIALLY - some lamps downstairs; overhead lighting still too stark	No. But I do think that the students like it as it creates a warmer environment. Many students have remarked that they wish that the pools of light were on all the time - maybe get them wired to the main light switches?
4. STANDING MEETING CORNER (aka WINDOW PLACE**)	-facilitates brief meetings for a few people; corner position incorporates VIEW OF NATURE, LIGHT ON TWO SIDES and provides a degree of privacy	MAYBE OR NO -used by teachers more than students? Stools often used instead = benefits lost?	No. They use it occasionally, but the Macs downstairs are used frequently as they are more collaborative.
5. COSY DISCUSSION CORNER (aka WINDOW PLACE**)	-opposite the STANDING MEETING CORNER, providing another option for different activities and a degree of privacy; incorporates VIEW OF NATURE and LIGHT ON TWO SIDES	YES - students, I observed, often go here with laptops to collaborate or work independently; place for student and teacher to chat	YES & NO. Students prefer to go downstairs.
6. VIEW OF NATURE*	-pleasing view of nature like trees, stream, sky, etc. Provides a contemplative, uplifting, inspirational or mindful counterbalance to screen work	YES - an inherited and fortuitous feature of the space, which is emphasized through the four WINDOW PLACEs	YES.
7. LIGHT ON TWO SIDES*	-people are drawn to windows and rooms with light on two sides; more diffuse light with reduction in shadow; provides a VIEW OF NATURE	YES - another inherited feature of the space, although one blind is nearly always closed, thus negating the value of the window. **Solution:** move computers to	YES. Makes the space very bright and airy.

		avoid glare issue.	
8. WELCOMING ENTRANCE (aka ENTRANCE TRANSITION)**	-provides a clear transition, the ENTRANCE TRANSITION, from bounded space (foyer), welcoming the user and signalling the feel or atmosphere of the space	NO - I don't think we've achieved this; entrance is rather abrupt and cold, although the view (layout) upon entering is appealing; perhaps it's the proximity of the first work station?	**YES. This is a hugely popular place for both students and teachers alike. The main detriment is the door itself.**
9. QUIET CORNER	-downstairs; comfortable chairs, ideally of different sizes and shapes; for more contemplative and individual work; reading corner; provides VIEW OF NATURE and POOLS OF LIGHT. It can also function as a COSY DISCUSSION CORNER	YES - one of students' favourites spots in the HUB. Two or three more chairs of different size and shapes needed	**YES. Widely regarded as the place to read, revise or just chill out without the cacophony of the MMC - and it is also a bit of a kept secret that only year 12's and 13's seem to be aware of...or willing to share.**
10. WARM FLOOR	-conveys a sense of warmth through colour and material; emphasized or enhanced by POOLS OF LIGHT and LIGHT ON TWO SIDES	YES - new parquet floor is a warm colour, provides acoustic dampening (warmer sound) and the light enhances appearance	**YES. Floors have changed the ambience of the room and made it a much warmer environment.**
11. INDIVIDUAL PODS for DESKTOP COMPUTING (with Macs)	-another WINDOW PLACE that provides opportunities for independent work (or in pairs); standing station for health and freedom of movement; VIEW OF NATURE, LIGHT ON TWO SIDES, POOLS OF LIGHT	YES - initially seemed to be used fairly often; certainly the layout, the look, is better than the low tables before	**YES. Kids like to work in groups - back to back - then they can turn around to discuss. Great for teachers as well.**
12. PRESENTATION AREA	-flexible and diverse areas: upstairs CAMPFIRE GATHERING with whiteboard, downstairs incorporating movable television, IDEAS WALL and FILM STUDIO. Rehearsal space for presentations, TED-style talks	NO - while the space exists, the TV is almost never used and other teachers perhaps need guidance (exemplars or training) in how to promote the space for presentations	**NO. TV seldom used.**
13. SMALL GROUPS WORK AREA	-larger space that allows for work in small groups of up to four or five students per station; should incorporate POOLS OF LIGHT	YES - tables downstairs with movable & COMFORTABLE CHAIRS, although POOLS OF LIGHT would provide a greater socio-material connection and make for a cosier atmosphere	**NO. Students use them when instructed but prefer the soft seating area...**
14. FILM STUDIO	-dedicated area for filming activities, including appropriate lighting, screens and sound; it functions usually as a SMALL GROUPS WORK AREA users can immediately use after or in relation to the IDEAS WALL	YES - although better acoustic dampening is needed; perhaps re-paint walls green (green screen)	**YES. Used as a green screen studio by the film class and this year a French class as well. We have more lights so it is easier to set up.**
15. COMFORTABLE SEATING	-provide a variety of COMFORTABLE SEATING through CHAIRS OF DIFFERENT SHAPES AND SIZES; different colours and textures to enhance tactile experience of users	YES - Ikea reclining chairs downstairs; the swivelling, ergonomic red work chairs on both floors; varied coloured stools; poof cushions; bench cushions. Still, some students and teachers have suggested sofas or such downstairs	**YES. Sofas would be great.**
16. DIFFERENT CHAIRS*	-people (especially students ranging in ages from 12-18)	YES - although a more eclectic mix of big chairs	**YES. Sofas would be great. Also, low tables to rest**

	are different shapes and sizes, so a choice of seating provides a better match. Provide different sizes, shapes and materials; old, new, armrests, no armrests, etc.	downstairs would create a cosier environment, which some students in interviews have called for on this floor to achieve a cosy atmosphere	**laptops on etc.**
17. DISCUSSION AND CONFERENCE**	-a more formal area for small- to medium-sized groups; part of the original Media Hub proposal to facilitate departmental, administrative and extra-curricular meetings; or conferences and training sessions	NO - we had an early layout with large rectangular desks intended for this purpose, but the furniture and layout didn't feel right. Revisit?	**No. The cosy area is somewhere where I have student meetings and where groups of students meet.**
18. PATTERNED CARPET**	-increases comfort, warmth and provides emphasis-- focuses an area	YES - Turkish kilim; are we *allowed* to keep it, though?	**YES.**
19. OVERLAP**	-These patterns (centres) should overlap where possible, with a piece of furniture, for example, part a few patterns (centres); avoid over-distinction or compartmentalization	YES - good evidence as described in other boxes in this table;	
20. WALLS???	?????????????	?????????	**NO. The students don't like the Mario World stickers - they love the film posters.**
21.Curtain	A curtain used to dampen sound from upstairs	YES	**YES. Dampens sound wonderfully and makes the space truly dual usage.**
22.			

* from Alexander et al.'s (1977) *A Pattern Language.* New York: Oxford University Press.
** from Christopher Alexander's (2013) Office Layout process
(http://www.patternlanguage.com/office/officelayoutedit.htm)

Appendix D: Information email to staff

information on research project

Christopher Hambley ████████████████████   Thu, Mar 14, 2013 at 2:59 PM
To: ██████████████████████████████

Dear Colleagues

I am starting a research project for my graduate studies with the University of Edinburgh on educational spaces, focusing for now on the Media Hub (formerly Old Primary library), how it's used and its development as an ICT learning space; as well I hope to study some other shared and learning spaces on campus. My ethnographic research will include observations of how students and teachers use the Media Hub's space and features, and perhaps some visual recording (photography and video) to document their movement within, and use of, the space.

Je vais également contacter certains d'entre vous pour vous demander l'autorisation de venir en observateur à votre cours dans le Media Hub, mais aussi pour conduire des interviews.

L'ensemble des données qualitatives ainsi recueillies me permettra de mieux apprécier la meilleure façon d'utiliser et de développer cet espace, de comprendre comment les enseignants et les étudiants participent à la transformation de cet espace d'apprentissage, mais il ne s'agit en aucune façon d'évaluer ou de juger la pédagogie des enseignants.

I will also be informing all students and parents of my intended research.

Cordialement,

Chris

Appendix E: Participation consent form

Consent for Participation in Ph.D. Research:
Space and Power in the Context of The New Media Hub at [*School's Name]*

Last January I embarked upon a Ph.D. in Education with The University of Edinburgh. The principal aim of my research is to see how power is negotiated in the context of The Media Hub—formerly the Old Primary library but now a space intended for media and ICT (Information and Communication Technologies) projects. More precisely, I will be researching how the design, transformation process and development of this space influence collaborative learning, teacher-student dynamics and interaction, as well as how all users of this ICT space.

Part of my qualitative research will include observing and writing about student learning, behavior, movement and attitudes while using the Media Hub and other ICT learning spaces. As part of this work, I would like your child to participate specifically in interviews and/or group discussions and/or learning activities that might be recorded with audio and/or video.

All data collected through observation or recording in interviews and/or discussion will be held anonymously and securely for the duration of my Ph.D. study only. Students will not be specifically identified by name, and other personal data will not be asked for or used, other than noting age and gender. The information gathered is purely for educational purposes and the student's privacy and rights will be respected. Finally, the full findings of my research will be made available to students and families if they wish.

By signing this consent form, you agree to allow me to use information gathered and observed before, during and after, but limited to the scope of, my Ph.D. study. Participants have to right to withdraw from this participation at any time.

Please contact me if you have any questions at: [my email address]

Kind regards,

Chris Hambley
English & Film and Animation Teacher
26.04.2013

I consent to the use of information observed and gathered, as detailed above, for the aforementioned research project.

_____   _____
Student Signature   Date   Parent/Guardian Signature   Date