**ACCESS: CONTEMPORARY ISSUES IN EDUCATION**
2017, VOL. 37, NO. 1, 28–40
https://doi.org/10.1080/00131857.2016.1269631

ACCESS

# Is the classroom obsolete in the twenty-first century?

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**ABSTRACT**

Lefebvre's triadic conception of *spatial practice*, *representations of space and representational spaces* provides the theoretical framework of this article, which recognises a productive relationship between space and social relations. Its writing stems from a current and ongoing qualitative study of innovative teaching and learning practices in new technology-rich flexible learning spaces, characterised by large open spaces, permeable boundaries and diverse furnishings emphasising student comfort, health and flexibility. Schooling in the twenty-first century, certainly in the developed world, is required to ensure that children and school-leavers have appropriate life-long skills in preparation for participation in the twenty-first century knowledge economy. This world is characterised as complex and dynamic, deeply influenced by globalisation and the revolution in digital technology. Developing these skills calls into question 'outmoded' transmission models of teaching and requires teachers and school leaders to approach their work in radically new ways. Open school design encourages flexibility in learning and teaching, and allows collaborative, team teaching, with designers claiming significant educational benefits. This arrangement of multiple classes using innovatively designed, technology-enriched common space, facilitated by multiple teachers, working in collaborative teams, is far-reaching in its likely implications for community expectations and responses, relationship building, assessment, student learning, teachers' work and initial teacher education.

**KEYWORDS**

Flexible learning space; modern learning environment; innovative learning environment; Lefebvre; twenty-first century learning; future education

**ARTICLE HISTORY**

First published in *Educational Philosophy and Theory*, 2017, Vol. 49, No. 8, 796–807

## Introduction

Schools' architect, Prakash Nair (2011), boldly proposed, 'the classroom has been obsolete for several decades. That's not just my opinion. It's established science' (p. 1). This challenge was intended to question traditional 'classroom-based education' as appropriate preparation for the twenty-first century. Nair went on to outline design principles which embody the worker of the twenty-first century, a self-directed, 'critical thinker' and collaborator able to work in a globally connected technologically rich environment. While Nair's brash pronouncement may not find favour among all educationists, his comments give rise to multiple questions of significance. Suggesting the classroom is obsolete seems to imply too that the practices taking place within are obsolete. Nair's remedy (and that of other designers, such as Fisher, 2005; and Tanner, 2009) is to redesign learning spaces that will bring about twenty-first century teaching and learning practices. Notwithstanding this apparently linear running together of space and practice, the subject requires attention, not least because of the present proliferation of modern educational facilities, both in schools and in higher education. McGregor (2004), writing a decade ago, noted a lack of educational research into the physical domain of teachers' work. There is little to suggest that this has changed,

though the rapid proliferation of new, innovatively designed flexible learning spaces suggests a greater need than ever to embark on such research.

This article grows out of a current and ongoing qualitative study of teachers' work in flexible learning environments. These learning spaces are intended to encourage innovative teaching and learning practices that focus on the preparation of students for the twenty-first century knowledge economy.[1] The practical, real-world context for observing teachers' work are the innovatively designed flexible learning spaces of two New Zealand primary (elementary) schools ('Innovation Primary' and 'Angelus School'). The underpinning theoretical premise is the notion of space as socially produced, advocated by Lefebvre (1991). This theoretical perspective challenges history or time as a sole factor in understanding social relations, and allows such questions as: what are the ways in which the actions and attitudes of teachers are shaped by, and help to shape, the space they work in? What is the relationship between what space affords or constrains, and these actions and attitudes? Do innovative classroom and school building designs render the classroom obsolete? What is the significance of that rendering?

It is appropriate at this point for me to address the inevitable question philosophers of education will pose: what role can empirical research play in the context of the philosophy of education? The answer lies in part in this editorial comment on the back cover of Lefebvre's book: '*The Production of Space* is a search for the reconciliation between mental space (the space of philosophers) and real space (the physical and social spheres in which we all live)' (1991). Merrifield, author of *Henri Lefebvre: A Critical Introduction*, adds this dimension: 'Theory must render intelligible qualities of space that are both perceptible and imperceptible to the senses. It's a task that necessitates both empirical and theoretical research, and it's likely to be difficult:' (2006, p. 108). Once recognising that there is a productive relationship between space and social relations, the significance of conducting empirical research and considering its findings in relation to theoretical investigation, becomes more obvious. There is an ideological purpose too; such research enables the demonstration of how a materialist interpretation of spatiality can be applied to real-world politics (Soja, 1989).

Lefebvre (1991) saw a critical link between the spaces of our daily reality and the production of the particular social form and relations envisaged by the dominant society, leading Chapman, Randell- Moon, Campbell, and Drew (2014) to suggest we ask critical questions 'regarding the ways in which schools and classrooms restructure education to actively constitute production and governance in the knowledge society' (p. 46). While there is the ever-present danger that the theorisation of space will slip beneath the waves of School Effectiveness and Improvement research (McGregor, 2004), if space is recognised as socially constructed, then it is less likely to be regarded as an objective collection of entities independent of the people who work in them.

One final question I would like to address regards the priority I give here to *teachers'* work. My decision reflects deliberate ideological intent. First, teaching is taken here to be an *ethical* act (Benade, 2012), consistent with the overt decision to become a teacher. This decision to teach is best portrayed as Freire (1998) did, namely that teachers *opt* to make a difference. Second, echoing Biesta's resistance to the steady *learnification* of the curriculum (2014), the study on which this article is based (and the larger enquiry of which this study is part) is premised on a rejection of the marginalisation of teachers and their work. Thus, it is neither accident nor oversight that the experience of 'learners' is underemphasised in this study.

## Contextualisation

Schools and schooling systems, in the twenty-first century, certainly in the developed world, are under pressure to ensure that children and school-leavers are able to acquire appropriate life-long skills. These include critical thinking and problem solving; collaboration and leadership; agility and adaptability; initiative and entrepreneurialism; effective oral and written communication; accessing

and analysing information; and curiosity and imagination (Wagner, 2008, cited in Saavedra & Opfer, 2012, p. 8). The concept of twenty-first-century learning reflects fluidity, unpredictability and complexity (Bolstad & Gilbert, 2012). Teaching and learning for the twenty-first century prepares young people for engaging in a complex and dynamic world deeply influenced by globalisation and the revolution in digital technology (see, for example, Beetham & Sharpe, 2013; Loveless & Williamson, 2013).

Developing these skills calls into question 'outmoded' transmission models of teaching that persist in global compulsory education systems (Organisation of Economic Cooperation and Development [OECD], 2009). Teachers and school leaders must approach their work in radically new ways (for example, Bolstad & Gilbert, 2012). This transformation is increasingly evident in new technology-rich flexible learning spaces, characterised by large open spaces, permeable boundaries and diverse furnishings emphasising student comfort health and flexibility. Open design encourages flexibility in learning and teaching (Chapman et al., 2014), and allows collaborative, team teaching, with designers claiming significant educational benefits (Fisher, 2005; Nair, 2011; Tanner, 2009).

New Zealand provides a specific national context, and over the past five years or so, the New Zealand Ministry of Education (MOE) has committed itself to a programme of providing significantly upgraded and modernised buildings. As it notes:

> We want all schools to have vibrant, well connected, innovative learning environments (ILE) that encourage and support many different types of learning.
>
> An ILE is the complete physical, social and pedagogical context in which learning can occur. We used to refer to these as modern learning environments (MLE). An ILE is capable of evolving and adapting as educational practices evolve and change. (2015, 'Flexible learning spaces in schools')

## The study

This inquiry forms part of a larger project of study that commenced in September 2013. The two case study schools referred to in this article, have been part of the project since it commenced. A qualitative case study enables the development of a deeper understanding of the way individuals within the cases operate (Berg, 2007). Of particular interest in this study is the view of Ary, Jacobs, Razavieh, and Sorensen (2006), who see in case study design the opportunity to understand how and why individuals respond to changes in their environment.

In this phase of the research, all classes at Innovation Primary (Year 0–2; Year 2–4; Year 4–6; Year 6–8) were observed once each (approximately 2 hours' duration each) and two were observed twice, a total of six observations over a five-week period in May and June 2015. Detailed observation notes were kept, informal conversations took place with students and teachers during observations, and field notes were audio recorded immediately after the observations, and later transcribed. The principal was interviewed and the teachers whose classes were observed (seven were present) participated in a focus group. At Angelus School, the Year 1–2 and Year 5–6 classes were observed three times each, over a three-week period from May to June 2015. Procedures were replicated. Six teachers attended the focus group of teachers. Themes were developed inductively as data were collected and subsequently analysed, and NVivo (http://www.qsrinternational.com) was used to support the process of systematic coding.

The learning spaces of both schools allow the flexible arrangement of a variety of educational furniture arranged in several ways to suit various purposes. Around 90 students can be brought together if required. Several breakout spaces, some walled, in single-cell design, come off the central open space. These allow smaller groups to work on specific tasks (such as a small-group workshop run by one of the teachers). As Innovation Primary is a new school with a growing roll, it uses only four of its available learning areas, that currently accommodate around 40 students each, with 2

teachers (called 'learning advisors'). By contrast, Angelus School has a full (yet growing) roll, and almost 100 students are located in each of its flexible spaces, with 3 teachers each.

This arrangement of multiple classes using innovatively designed, technology-enriched common space, facilitated by multiple teachers, working in collaborative teams, is far-reaching in its likely implications for community expectations and responses, relationship-building, assessment, student learning, teachers' work and initial teacher education. Common concerns and breakdowns in practice abound, however, including teachers attempting to conduct 'business-as-usual', teachers anguishing over how to keep track of three times the number of students and over how to report knowledgably to parents, who in turn question 'hands-off' teaching and 'self-managed learning'. Managing an understanding of this interesting confluence of practice and space goes beyond mere behavioural observation, or chronological analysis, instead inviting engagement at a deeper, conceptual or theoretical level. For this purpose, I have taken up the insightful ideas and theories proposed by Henri Lefebvre, in his classic text, *The Production of Space* (1991).

## An introduction to Lefebvre

Lefebvre became, post-1950s, an influential figure in promoting the role of space in critical social theory. He sought to reclaim spatiality over time/history in critical social analysis (Soja, 1989). Soja argues that Western Marxism and critical theory up to the 1980s had failed to pay sufficient attention to the role of space in determining social relations, and social relations in producing space. There were agendas in these camps uncomfortable with the displacement of historicity as a determining factor. The English translation of *The Production of Space* gained Lefebvre an Anglo West audience in the 1980s, making up for an apparent lack of appreciation among his own French audience, where he was 'misunderstood and overlooked' (Merrifield, 2006, p. 101). His humanistic Marxist perspective on spatiality and urban life, offers considerable scope to think theoretically about ambitious and progressive educational building design.

The basic account Lefebvre proposed is of space as social, and as a social product. What are the implications and consequences of the proposition that social space is a social product? The first implication is that nature is being destroyed, and Lefebvre concluded that natural space will disappear. A second implication is that every society has its own identifiable space and spatial practice. Therefore, any effort to understand the space of any particular society requires understanding that society and its people, texts and practices. Third, if space is a product, our knowledge of it must be expected to reproduce and expound the process of production. Finally, if production is a spatial process, then it must have a history. This history of space is, however, not to be confused with history and any causal chain of events.

Lefebvre's triadic conception of *spatial practice*, *representations of space and representational spaces* constitute the load bearing walls of his epistemological project, but 'loses all force if it is treated as an abstract "model" … amounting to no more than that of one ideological mediation among others'. (1991, p. 40). Spatial practice, which can only be assessed empirically, is discerned by deciphering the space of a society. 'The spatial practice of a society secretes that society's space …' (1991, p. 38), thus it might be said that spatial practice is widely, if not universally, understood by members of a society in which that practice is embedded. This practice provides some continuity and coherence and thus implies that it guarantees a level of competence and level of performance. Representations of space have a practical impact on our lives. This is the space conceptualised by planners and technocrats. 'Their intervention occurs by way of … architecture, conceived of … as a project embedded in a spatial context …' (p. 42). These representations are 'shot through' (p. 41) with both knowledge as power (ideology) and critical knowledge, have the power to modify and are informed by ideology, have links to the relations of production, and to that which provides order in a society. Representational space is space as lived experience, the space of inhabitants and users. 'It

has an affective kernel or centre: Ego, bed, bedroom, dwelling, house; or: square, church, graveyard' (p. 42).

Thus it is now possible to perceive representations of space in the notions architects and designers have of educational buildings, as they grapple to create unique and innovative designs to convey the (ideological) messages of learning and teaching for the twenty-first century knowledge economy. The way a school implements and uses its flexible learning space amounts to its spatial practice—perhaps providing guidelines to its users on how the space ought to be lived. Simultaneously, members of society, driving past the school building recognise it as a place of learning, as they no doubt recognise a cemetery as a repository of the deceased. Accordingly, they are aware that certain customs and behaviours pertain to such spaces.

But how is the space actually lived? Do, as Merrifield suggests, 'spatial practices structure lived reality' (2006, p. 110), or do the occupants and users of a space create their own lived reality? Lefebvre's project is thus an ontological one too—exploring the connections between being and space. For Lefebvre, it was important 'to point up the dialectical relationship which exists between the triad of *the perceived, the conceived, and the lived*' (1991, p. 39. Emphasis added). The triadic of spatial practice, representations of space and representational space, all combine in the production of space. The three moments of perception, conception and living are simultaneously conscious and unconscious.

## Spatiality

Understanding precisely what is intended by 'space' is challenging in itself. I am concerned in the cur- rent context to make sense of the notion of 'flexible learning spaces'. These have variously been termed 'flexible learning spaces'(State of Victoria, 2011,'Making the most of flexible learning spaces'), 'modern learning environments' (MLE) and now, more recently, 'innovative learning environments' (ILE) by the New Zealand MOE (2015), 'Flexible learning spaces in schools').[2] It is a theoretical error, suggested Lefebvre, to see space as a container, as a 'thing' and to fail to see the holistic interrelationship of things in space with the space. Space also disguises underlying social relations. Lefebvre's great contribution was to distinguish between physical space, the space of cognition and the space of representation. He was thus able to reject a physical space-mental space binary, by inserting social space as a category of significance, so that space does not simply situate itself outside of our bodily experience of space, but is instead applied to real life.

Lefebvre was deeply critical of a wide range of theorists who used the concept of space loosely, as a mental construct, leading to a fascination with such notions as 'literary space', 'ideological space' and so on. In this way, any 'set' or 'ensemble' could be put together according to the author's liking. Yet, this way of thinking about space fails to provide a clear understanding of space, or the place of people in space. He was cutting of Foucault for having no clear explanation of what 'space' means, reducing it to discourse, leading to the burial of the lived experience of space under a mound of meaningless language. Linguistics too came under attack, as a 'metalanguage, empty words and chit-chat about discourse' (p. 134). In the process, one of the victims is 'the forbidden fruit of lived experience [which] disappears under the assaults of reductionism' (p. 134). Lefebvre also laughed off the idea that space may be *read*, as semiologists may imagine. Space is first and foremost *produced*, and it is produced 'in order to be *lived* by people with bodies and lives …' (p. 143).

Husserl was accused of perpetuating the Cartesian project, while Heidegger was critiqued for giving space no greater status than simply 'being-there', and for emphasising time over space. Heidegger's understanding of production was dismissed as restrictive because of his notion of the process of emergence, bringing things to appear. In the end, for Lefebvre, descriptive understandings of space must give way to the analytical. He warned against an understanding of space replicating a kind of commodity fetishism, whereby the labour value of commodities is reduced to its exchange value—soon we see the commodity as a 'thing in itself'; in the same way,

we may come to see space as a thing-in-itself, or, on other words, we cease to view space critically, and imagine it has an unproblematic taken-for-granted aspect, a natural part of the world.

## What are the philosophical underpinnings in Lefebvre's work?

Confusingly, Lefebvre's project was 'to expose the actual production of space by bringing the various kinds of space and the modalities of their genesis together within a single theory'(p. 16), yet he argued for a right to difference, pre-empting postmodernism. His vision of an embodied space pushed back against the homogenising power of models and ideologies. His 'unitary theory' would connect disparate fields of the physical, mental and social. In this regard, Lefebvre's postmodernist interest in difference responded to the totalising effect of spatial development, which he observed as the impact of capitalist development and instrumentalised spatial planning on the rural countryside where he originated (Soja, 1989). The homogenous, fragmented and hierarchical effects of this development helped capitalism to keep a veil over spatiality, mystifying it and shielding it from critical analysis (1989). Yet, Lefebvre argued, it is in space where the relations of production are reproduced—an argument that caused him to be rejected by many Marxists. He was further rejected for his humanistic Marxist perspective, which saw space not as a container to be filled, of a vacuum populated by human imaginings, but as 'the milieu of accumulation, of growth, of commodities, of money, of capital …' (1991, p. 129).

Lefebvre accepted Marx's position on the primacy of material life in producing conscious thought (Soja, 1989). Social being produces consciousness, not the other way around.[3] He was anti-reductionist and anti-structuralist, and was critical of Althusser, and yet while he discarded the weaknesses of existential phenomenology and structuralism, he absorbed their strengths into his theory, creating an eclectic brand of materialism. Without having to revert to Sartre's almost morbid focus on the isolated individual, Lefebvre was able to dwell on the relationship individuals have with space, both creating distance, (thus creating space) while yet being able to relate to it. In this regard, flexible learning spaces contain within themselves the enforced requirement that their occupants relate to the space and each other collaboratively, but do so against a primal urge to seek solitude and privacy. Soja (1989) points out the dilemma of alienation versus meaning that is central to this kind of ontological dance. It is critical that we establish a point of view, even as we seek to relate and establish a shared identity.

## Application to the flexible learning spaces

Such tension as just described—and more—is evident in both student and teacher experiences of working in flexible learning spaces. For the purposes of this article, however, only teacher experiences will be directly highlighted, student experience somewhat indirectly. Before proceeding, however, there is some value in providing further contextual reference points, with specific focus trained on the spatial dimension as observed during the period of research.

### *The buildings*

Innovation Primary is a Year 1–8 state primary school, established in 2013, and designed according to innovative educational design principles. Externally, it appears as a continuous, linear, industrial building on one level. Internally, it resembles a contemporary twenty-first century airport concourse, with a spacious and wide flowing walkway. Learning and workspaces are located off the walkway. There are few internal walls and the egg crate design of traditional schools is absent. Similarly, the administration areas are open plan, with no designated closed offices, to the extent that the principal and staff share common areas for work. Outside areas are visible through very large and generous glass walls and windows.

Angelus School, a Year 1–6 state-integrated special character (Catholic) school,[4] was established in 2010. It is a two-storey school, and though designed using contemporary materials and techniques, the core design of its initial building is typical of egg crate or single cell traditional schools. The ground- level verandah and covered upper walkway look on to a large quadrangular and playground area. The classrooms enjoy the benefits of natural light, with very large windows looking out to the quadrangle on one side, and the currently undeveloped land on the opposite side. The second building phase introduced, on both levels, two large flexible learning environments.

### *The 'third teacher'*

The spaces within these buildings, their environmental design, technology integration, furnishings and walls (to the extent these exist) create a specific milieu, and with it, a set of behaviours and discourse less likely to be present in a regular single-cell classroom arrangement. Indeed, it is argued that the environment is the 'third teacher', an integration of pedagogy, technology, curriculum and facility (Sullivan, 2012). There exists an interesting tension between porosity and parameters or informal boundaries. Where walls are missing, creating much larger spaces (that can take as many as 90 students), furnishings create new dynamics (and language) of space. The large space allows the students to take up various positions in a variety of places, in various seating arrangements (ranging from the floor, to a variety of seating types and modes). It is possible for the students to clearly set aside their work (to return to later) and devices, and to take up a different position and role. They switch from being active and crafting a reflection, for example, to being seated more or less passively, listening to the teacher.

The learning areas are well lit, but not glaring, shedding softer light than might be associated with the kind of fluorescent lighting typical of many standard classrooms. Sound is muted, despite the congregation of such a large group of students. The walls communicate a teaching narrative—one, for example, that emphasises the importance of numeracy, such as seen when students self-select 'basic facts' numeracy tasks, displayed prominently on one of the walls. This strategy was observed at both schools. The walls at Angelus School also communicated the narrative of progress and surveillance. The whole class (of 90 students) is subdivided into sub groups, each of which has its own 'student radar'. The children maintain the radar with various levels of 'smiley' face (emoticon) to plot their progress against their tasks. The 'radar' suggests both (self) surveillance while also providing an alert of impending danger (to the teachers?), while the emoticons give the act of surveillance a benevolent character.

Perhaps most interesting, however, is the function and significance of furniture. As Sullivan (2012) notes, collaborative teaching and learning requires flexible furniture that can be easily moved to match the activity, and be used in multiple ways. Furniture ought to be designed so that the classroom is an inviting and engaging space. In contrast, regular classroom furniture is 'one size for all', disregarding, for example, gender differences for body position and posture. Representations of space, as Lefebvre argued, 'are tied to the relations of production' (1991, p. 33), nowhere better seen than in the instance of furnishings. A significant shift encouraged by design conceptualisation is the move away from the doctrine of a seat for each student. This shift has permitted (required) a form of 'hot desking', whereby students no longer claim territorial ownership of a specific desk and chair. Instead, they are free to work where suitable, and work at desks, or take up a seat, when these become available. Furniture designers and education bureaucrats arguably regard this practice as appropriate preparation for the workplace of the future, where such practices are increasingly common (Morrison & Macky, 2017).

To this mix are discursive practices that have arisen in connection with furnishings and their placement. The placement of tables and chairs, often boardroom style, is a place where a 'workshop' can take place, facilitated by a teacher, or, more appropriately, a 'learning advisor' or 'coach'. A private space off to the side for a small group to work together is a 'breakout space'. Along with this

neoliberal language of the business conference is the imagery of the future hunter-gatherers of the twenty-first century knowledge economy gathering at the 'campfire' (a circular formation of Ottomans). Redolent of captivating tales or fellowship, this is a space of gathering together before expedition, or debriefing after. Thirsting for knowledge, some young cubs work intently at a 'watering hole', a circular arrangement of seats and tables, where they plan their next project. For those who are required to work on complex tasks (such as numeracy) there are the high tables and chairs that provide a 'lookout', allowing these students to gaze intently into the long distance, as they solve challenging problems.

Lefebvre's triadic understanding of space is deeply evident in this analysis. Designers of space and furniture conceptualise their products in ways they believe will ensure students of the twenty-first century will feel most 'at home' and 'at ease' (Oblinger, 2005; Sullivan, 2012). It is the spatial practice of these schools to encourage self-managed learning in a collaborative environment, and students very quickly have adapted themselves to using the furniture and walls precisely as intended.

### *Teacher experience*

The teachers at both schools have a unique lived experience of working in flexible learning spaces, evident in their comments in focus groups and short, informal interviews. These are analysed according to themes of collaboration and transparency, challenging personal professional practice and personal investment.

Apart from flexibility, key design concepts are to create possibilities for collaboration and teamwork (Lippman, 2015; State of Victoria, 2011, 'Making the most of flexible learning spaces') and transparency, or open plan (Blackmore, Bateman, Loughlin, O'Mara, & Aranda, 2011), which both supports collaboration and creates an awareness of physical presence in the learning process. Assembling and melding effective teams of teachers to work collaboratively, and create a spatialised practice to give life to this design concept is, however, challenging, and was acknowledged as a significant issue at both schools. Bridgette, a team leader at Angelus School, reported that 'it's highly stressful and very challenging … you have to make sure that your team doesn't fall out and … collaboration comes with a huge amount of personal responsibility'. In fact, Tayla, a senior leader at Innovation Primary, suggested that the space and furniture is 'almost a non-event' in comparison with the matter of building the correct team. There is little, she believed, to prepare teachers for 'the real relationship stuff of working in a cohesive team together, all the time, five to six hours a day', certainly not 'those things that were traditionally taught at teachers' college [which now] have completely been thrown on their head'.

Transparency is an easily identifiable characteristic of flexible learning spaces. Gone are solid walls and closed doors looking onto darkened hallways. In their stead are air and light, glass and floating ceilings, buildings with large volumes and dramatic staircases. Teams of coaches, facilitating learning in full view and in earshot of all who pass by, now replace the teacher behind closed doors. This sense of 'being exposed [requires] having that high level of trust that people aren't walking past going, "What's happening there" all the time' (Sheryl, teacher, Innovation Primary). Bella, Angelus School, emphasised this element of trust: 'are they observing me? What are they thinking? That high level of trust just dispels all of that sort of feeling of pressure, of someone's watching me, what are they thinking?' At Innovation Primary, Sheryl and her teammate, Sasha, have to be confident that they are supporting each other, not judging each other, yet remain open to critical feedback. The professional practices encouraged at both schools requires teachers to constantly vocalise their thoughts—referred to by Bina, teacher at Angelus School, as 'deliberate acts of teaching', actively demonstrating through speech and action to students 'how to lead their own learning … [and] … what a responsible student should look like and do'. Stuart, teacher at Innovation Primary, stated, 'we're planning aloud, we're wondering aloud, we're thinking aloud, we're reflecting aloud'. This transparency and openness to the world extends to parents at Innovation Primary, who, it was

observed, feel sufficiently uninhibited to step into the (relatively non-defined) open learning spaces prior to the end of the day, where the words and actions of teachers and students are immediately apprehended by the waiting parents, but as Lilly, the teacher of that class indicated to me, '[h]ere, we actually want our parents to be a part of what we're doing'.

While the preceding analysis of collaboration and transparency in relation to teachers' practice at the two sites demonstrates the relationship between conceived space (transparency, openness to encourage particular pedagogical practice), and perceived space (the actual practices occurring in that space), it also reflects the lived space of experience—the stress of making collaboration work, the feelings of vulnerability, and a sense of always being on show. The experience of the teacher participants chimes with the conceptualisation of education and flexible learning environments promoted by the MOE (2015) as sites of collaboration, a practice it argues underpins and promotes the national curriculum (2007). It is this document that envisages the digitally connected, confident life-long learner, able to contribute to a global economy. As Lefebvre noted, such planners and social engineers conflate the lived, perceived and conceived, evident in the discursive practices of the teachers, who at once imagine collaboration and transparency, seek to practice it, and endure the pain of bringing these notions to life in daily practice.

Teachers working these spaces have found themselves and their conventional practices challenged, having to re-learn, to learn anew, as they give up their control. In personal discussions and focus groups, this idea of consciously making shifts was frequently repeated. Developing student agency (the capacity to be a self-initiated learner, for example) is a key focus, but as Bina, teacher at Angelus School, noted, a single-cell classroom experience is not a good grounding for developing this ability, 'because agency is the teacher in a single cell classroom'. Stuart, as a new teacher at Innovation Primary, empathised with the difficulty students have transitioning into the new spaces and ways of learning: 'the struggles that they were having' were his too. Some thought of themselves as beginning teachers, such as Tayla, senior leader at Innovation Primary, for whom 'it took a lot of brain power, brain strain initially. We were spending as many hours as a beginner teacher would spend on looking at practice.' There is the ever-present danger of back-sliding into a default setting, of 'indirectly doing things … a traditional way' (Bina, teacher Angelus School), and as Bella, a colleague of Bina noted, 'we really had to go back and re-think okay, there's something wrong with our practice'. Sasha, teacher at Innovation Primary, was very conscious of default behaviour, in students as much as herself, admitting 'when I'm stressed or tired I can really slip easily not into innovative practice. *The environment doesn't make me think about teaching differently enough that that default isn't still there*' (emphasis added). Thus for this teacher, her default settings in teacher practice lurk constantly in the background, and her lived experience of the flexible learning space is to remain ever self-vigilant.

This point regarding vigilance is relevant to the personal investment the teachers expressed, evocatively captured by Tayla:

> [W]e're all so heavily invested we don't switch off. I used to go home and I didn't think about work. Now I go home and … I'm still thinking about work and we're still checking emails and we're still texting each other. There's a higher … investment and level of responsibility and care taking involved for each other and the kids.

This personal investment is mirrored in the commitment of these teachers to the spatial practices deemed appropriate to working in flexible learning spaces. Sheryl's reason for opting to work at Innovation Primary is that 'this school really understands how young children learn best and the expectation is that they're not going to be sitting down for an hour doing writing all together every day', while her colleague, Stuart is invested 'not just in the physical space, [but] is buying into … the notions of … dispositions [and] … values.' A final, graphic evocation of the level of personal investment was demonstrated by Bella at Angelus School who expressed her keen disappointment at the imminent departure from the school of one of her team colleagues:

> [N]ow Nicola's leaving us … we feel like it's like a part of us is going because we have worked so closely for so long … It's like you're entering a committed monogamous relationship with your team and you have to commit to being there together through everything.

The challenge to professional practice, and the personal investment of the teachers, both represent a break with the overt place of the body in lived experience. These experiences have challenged the minds of the teachers in the first instance; as Lefebvre suggested, 'the imagination seeks to change and appropriate'(1991, p. 39) representational space (the space of lived experience). The teachers articulate their understanding of what it is to live in these spaces in terms of loyalty, commitment and will power.

## Critical discussion

Lefebvre's (1991) notion of space as a social product, suggests that space is a place of relation reflecting wider social and economic relations. It is easy to be dazzled by the newness and originality of the mod- ern flexible buildings, not to mention their integration of technology. If, however, following Lefebvre, one attempts to imagine the human relationships that combined in the first instance to conceptualise, then create the space, and in the second, to sustain it, then one sees these buildings with new eyes. It is also important to reflect on the kind of relationships the flexible learning spaces generate and sustain.

The Lefebvrian notion of representations of space (conceptualised space) as shot through with ideology; being influential in shaping ideology, yet being shaped by ideology, allows an opening to consider how flexible space now erodes the previous boundaries associated with the hierarchical and authoritarian nature of industrialised single-cell classrooms. Of course, one should recall Soja's (1989) preference to speak of post-Fordism, rather than post industrialism, as an appropriate moniker to apply to present times, so as not to gloss over the reality that capitalist modes of industrialisation remain an ever-present reality.

The flexible school (and higher educational buildings), ever more evident, are clearly a product of a neoliberal concern with ensuring that education is relevant to the realities of the twenty-first century workplace. This built reality follows on from a conception of space that reflects this governing variable. Flexible learning spaces emerge from a history of building for that catered for an industrial age of disciplined workers guaranteed to turn up at the same place, same time, day after working day. Instead, educational institutions must reflect the imaginary of '21st-century learning', which conceptualises a 'smart' worker, flexible and agile, able to make a critical and creative contribution to the workplace of the twenty-first century.

These flexible buildings and learning spaces present a doctrine, through their implied practice, and the explicit practices of their occupants and users, of modern approaches to preparation for participation in a 'brave new economic world'. To be faithful to Lefebvre, however, it must be pointed that this world is one in which the best prepared will be those whose much-vaunted skills of 'flexibility' and 'agility' will enable them to cope with the realities of *under-employment and partial employment*.

A redefined workplace requires that teaching and learning be shifted out of the confines of the traditional classroom, into hallways, common spaces and any place that can be connected wirelessly, thus becoming a place of learning (Ford, 2014; Nair, 2011). This move, and spatial practice, replicates the new dynamic of a remote and mobile workplace, staffed by part-time and 'flexible' contract workers, thus perpetuating the ideology of global capital (Ford, 2014), and the importance of education preparing young people to be responsive to the demands imposed by global capital.

The flexible, transparent and open learning spaces and their environs are, as Lefebvre claimed, 'redolent' with symbol and imagery. They dictate a certain kind of behaviour as typical and as 'appropriate', such as generating a consensus between the open spaces and the imperative to

collaborate. The representational spaces, the lived reality of the users and occupants of suggests, however, that practice is not always entirely according to ideological plan. Lefebvre presented space as hyper-com- plex and characterised by crosscurrents and tensions, and this is reflected in the uneasy transition from traditional to modern in teachers' practice. An awkward friction exists at the junction of interior space (teachers' mental and emotional commitments), physical space (nature, or for these purposes, the built environment) and social space (the space of speech, communication and collaboration). The transition from one kind of physical space (the single-cell classroom) to another (the flexible learning space) requires a transition of inner space that makes the physical shift very difficult.

Any space, suggested Lefebvre, has the characteristics of both object and subject. A façade, seen from the street, manifests what is on window ledges and balconies, while from the vantage of the balcony, it is possible to see the street procession. What is not visible is the obscene—what is behind the façade. While flexible learning spaces will liberate teachers and students, and while it is evident that different possibilities are yet to yielded by these spaces, their true value may be obscured by the underpinning motivation of creating and promoting a vision of the workplace of the twenty-first century, not to mention the reluctance of educators to adopt different ways of teaching and learning, as the earlier open-plan movement discovered (Woolner, McCarter, Wall, & Higgins, 2012). Flexible learning spaces do not stand outside of their historical development and definitely not their own socio-spatial development—thus to render the classroom as obsolete is premature.

## Ethics approval

This research was approved by the Auckland University of Technology Ethics Committee (AUTEC), on 2nd April, 2015 (ref No. 15/86).

## Notes

1. From the *New Zealand School Property Strategy 2011–2021* (MOE, 2011):'The Ministry of Education, as the owner of state schools, requires a portfolio of well-maintained schools supporting a modern education system that produces skilled people who can contribute towards a productive economy.' (p. 3).
2. The lived reality is interesting, as the short-hand preference of many teachers, principals and others is 'MLE', and it may be some time before the MOE succeeds in shifting this usage to 'ILE'.
3. This is an arguable position, even within a humanistic framework. I refer here to Paulo Freire, who argued strongly for greater dialectical flexibility in seeing society and being, as acting on one another, and having mutual influence.
4. By a 1974 Act of Parliament, formerly private schools (such as religious schools) are able to opt into the New Zealand state system, with certain conditions attached.

## Disclosure statement

No potential conflict of interest was reported by the author.

## Funding

This work was supported by contestable funding awarded by the School of Education, Faculty of Culture and Society, Auckland University of Technology in 2015.

## Notes on contributor

***Leon Benade*** has research interests in teachers' work, school policy, ethics, philosophy in schools, critical pedagogy and the New Zealand Curriculum. His current research focuses on how '21st-century learning' impacts the work of teachers and school leaders, particularly in relation to the establishment of Innovative Learning Environments (ILE) and digital pedagogies. Related areas of interest include the question of teachers' critical reflective practice and the evolving role and nature of the concept of 'knowledge' in the twenty-first century curriculum.

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## References

Ary, D., Jacobs, L., Razavieh, A., & Sorensen, C. (2006). *Introduction to research in education* (7th ed.). Belmont, CA: Thomson Wadsworth.

Blackmore, J., Bateman, D., Loughlin, J., O'Mara, J., & Aranda, G. (2011, June). *Research into the connection between built learning spaces and student outcomes* (Literature review, paper No. 22). State of Victoria (Department of Education and Early Childhood Development). Retrieved August 12, 2015, from http://www.education.vic.gov.au

Benade, L. (2012). *From technicians to teachers: Ethical teaching in the context of globalized education reform*. New York, NY: Continuum International.

Beetham, H., & Sharpe, R. (Eds.). (2013). *Rethinking pedagogy for a digital age: Designing for 21st century learning* (2nd ed.). New York, NY: Routledge.

Berg, B. (2007). *Qualitative research methods for the social sciences* (5th ed.). Boston, MA: Pearson Education.

Biesta, G. (2014). Pragmatising the curriculum: Bringing knowledge back into the curriculum conversation, but via pragmatism. *The Curriculum Journal, 25*, 29–49. doi:10.1080/09585176.2013.874954

Bolstad, R., & Gilbert, J. with McDowall, S., Bull, A., Boyd, S., & Hipkins, R. (2012). *Supporting future-oriented learning and teaching: A New Zealand perspective*. Report prepared for the Ministry of Education. Wellington: New Zealand Council for Educational Research and Ministry of Education. Retrieved August 8, 2015, from http://www.educationcounts.govt.nz/publications/schooling/109306

Chapman, A., Randell-Moon, H., Campbell, M., & Drew, C. (2014). Students in space: Student practices in non-traditional classrooms. *Global Studies of Childhood, 4*, 39–48. doi:10.2304/gsch.2014.4.1.39

Fisher, K. (2005). *Research into identifying effective learning environments*. Retrieved from https://www.oecd.org/education/innovation-education/37905387.pdf

Ford, D. (2014). Spatializing Marxist educational theory: School, the built environment, fixed capital and (relational) space. *Policy Futures in Education, 12*, 784–793. doi:10.2304/pfie.2014.12.6.784

Freire, P. (1998). *Pedagogy of freedom: Ethics, democracy and civic courage*. Lanham, MD: Rowman and Littlefield.

Lefebvre, H. (1991). *The production of space*. (D. Nicholson-Smith, Trans.). Malden, MA: Blackwell.

Lippman, P. C. (2015). Designing collaborative spaces for schools. Condensed from *T.H.E. Journal*, February 2013. Retrieved from http://thejournal.com/articles

Loveless, A., & Williamson, B. (2013). *Learning identities in a digital age: Rethinking creativity, education and technology*. New York, NY: Routledge.

McGregor, J. (2004). Spatiality and the place of the material in schools. *Pedagogy, Culture and Society, 12*, 347–372.

Merrifield, A. (2006). *Henri Lefebvre: A critical introduction*. New York, NY: Routledge, Taylor & Francis Group.

Ministry of Education (MOE). (2007). The New Zealand curriculum. Wellington: Learning Media Limited. Retrieved from http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum

Ministry of Education (MOE). (2011). *The New Zealand school property strategy 2011–2021*. Retrieved from http://www.education.govt.nz/assets/Documents/Primary-Secondary/Property/SchoolPropertyStrategy201121.pdf

Ministry of Education (MOE). (2015). *Flexible learning spaces in schools*. Retrieved August 12, from http://www.education.govt.nz/school/property/state-schools/design-standards/flexible-learning-spaces/

Morrison, R. L., & Macky, K. A. (2017). The demands and resources arising from shared office spaces. *Applied Ergonomics, 60*, 103–115. doi:doi.org/10.1016/j.apergo.2016.11.007

Nair, P. (2011). The classroom is obsolete: It's time for something new. *Education Week*. Retrieved August 12, 2015, from http://www.fieldingnair.com/index.php/publications/

Oblinger, D. G. (2005). Space as a change agent. In D. G. Oblinger (Ed.), *Learning spaces* (pp. 1.1–1.4. Boulder: Educause. Retrieved from http://www.educause.edu/LearningSpaces

Organisation of Economic Cooperation and Development (OECD). (2009). *Creating effective teaching and learning environments: First results from TALIS*. Retrieved from http://www.oecd.org/education/school/43023606.pdf

Saavedra, A., & Opfer, V. D. (2012). Learning 21st-century skills requires, 21st-century teaching. *Phi Delta Kappan, 94*, 8–13.

Soja, E. W. (1989). *Postmodern geographies: The reassertion of space in critical social theory*. London: Verso.

State of Victoria (Department of Education and Early Childhood Development). (2011). *Making the most of flexible learning spaces: A guide for principals and teachers*. Retrieved August 27, 2015, from http://www.education.vic.gov.au/

Sullivan, C. C. (2012, February). Classroom furniture – The third teacher. *Buildings, 106*, 2. ProQuest Central.

Tanner, C. K. (2009). Effects of school design on student outcomes. *Journal of Educational Administration, 47*, 376–394. doi:10.1108/09578230910955809

Woolner, P., McCarter, S., Wall, K., & Higgins, S. (2012). Changed learning through changed space: When can a participatory approach to the learning environment challenge preconceptions and alter practice? *Improving Schools, 15*, 45–60. doi:10.1177/1365480211434796