Confusing messages: Is the modern learning environment an example of idealized curricula or disruptive innovation?

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Despite global commissioning of new school designs, there is a body of literature (Lackney, 2002; Moore & Lackney, 1993; Nair, 2002; Nair & Fielding, 2005; Tanner, 2001; Taylor, 2002; Wolff, 2002) that documents the challenges that environmental designers encounter when they endeavour to design for educational purpose. One difficulty has been the problem of negotiating the various ways education is being interpreted and delivered across schools. Jilk (2001), in supporting this notion, argued that environments could actively nudge learners towards freedom and creativity but he is sceptical of freedom, arguing freedom is often assumed, especially in choice of learning programmes offered in schools. In reality, learning often becomes focused and controlled. Changes of the 21st century have led to shifts in international thinking about education and curriculum development and most of all creating the conditions necessary to cultivate powerful ‘learners’ (Taylor, 2002). The concept of ‘freedom’ as a way of providing flexible, open learning programmes is a notion continually debated by architectural designers especially in the context of schooling but the tension between ‘freedom’ and ‘focused and controlled,’ significantly influences their practice.

This paper is the beginning of a study examining the ‘modern learning environment’ (MLE) as an agent of teaching and learning, and debates the MLE as an example of idealized curricula or disruptive innovation.

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Architects and property managers in New Zealand face major challenges when designing educational environments that reflect 21st learning and a revised New Zealand Curriculum (Ministry of Education, 2007). The New Zealand Curriculum clearly indicates that education is in a period of one of the biggest changes in educational history that will potentially render previously designed physical environments and long held philosophical views of pedagogic practice redundant.

Changes such as this (especially to secondary school education) signal a philosophical divergence to previous models of schooling and will not only significantly influence the design of the learning environment but also signal a need to question the relevance of pedagogy and curriculum. In the past five years several new schools have been designed, built and occupied that reflect a spatial configuration more suited to a very different approach to learning and have become known as ‘modern learning environments’, (MLE’s). Since their implementation the modern learning environment has avoided a rigorous examination of its design, function and purpose and even though designs emulate international thinking, their context in New Zealand’s educational system needs to be critically appraised.

In 2002 the New Zealand Ministry of Education, along with a newly elected government, launched a project named ‘Secondary Futures’ (Ministry of Education & Secondary Futures, 2004) to open a dialogue, with a diverse set of participants, about the purpose and direction of secondary schooling. Secondary futures collected formal written feedback from over 900 participant workshops to establish that the time was right for exploring alternatives to the bureaucratic schooling systems in New Zealand (Roberts & Gardiner, 2005). Within this literature there is a reference to ‘schooling for tomorrow’, and ‘21st century schooling’, and was the foundation thinking for ‘21st century learning’ and the ‘nature of teaching in the 21st century’ referred to in current Ministry of Education documentation and policies.

Learning For the future

Teaching for 21st century or 21st century learning are terms that are interpreted in a variety of ways, future focused, learning for the future, futures education, and lifelong learning. Whichever term is used amongst educational professionals, there appears to be similar perspectives about what it means, preparing students for a future that is very different to what it has been in the past. A future that is recognised as a revolution where accelerating innovations and technological advancements have changed the way people live, work and socialise. Burns (1995) argues that people living in the future will need to be adaptable, be problem solvers, be creative, connected, collaborate, share their learning, expect rapid change, and function in an information rich society. Businesses and industry will need to cope with global competition making work unpredictable, uncertain, and ultimately changing the way we learn, work and live our lives (Wagner, 2008).

There is an acceptance that education must change to meet the needs of learners who are born into a world significantly different to any that has been evident in the past. The influence of a highly technological age has impacted people’s lives, social patterns and career options. This explosion of technology has changed the way information can be obtained and shared and the way learners communicate. Learners are no longer dependent on the teacher being the font of all knowledge and in fact are more informed in some concepts, than teachers (Beetham & Sharpe, 2013; Bull & Gilbert, 2012; Carmean & Haefner, 2002; Coppen, 2002; Schlechty, 1998; Wagner, 2008).

Bull & Gilbert (2012) argue that, “New approaches are needed if our young people are to develop the “dispositions” (to knowledge, thinking, learning and work) needed to productively engage in the
21st century world, “ (p. 1). Robinson (2001) reinforces the need to review our understanding of intelligence, human capacity and of the nature of creativity. Goleman (1996) recommends the development of intrapersonal and interpersonal skills. Scardamalia & Bereiter (2006) debate an interesting shift from treating students as learners and inquirers to treating them as members of a knowledge building community which as they admit lie outside the scope of most constructivist approaches.

Leadbeater and Wong (2010) see a need to implement transformational innovation. Transformational innovation will create new ways to learn, new skills, in new ways, outside formal school and see these programmes:

- pulling families and children to learning by making it attractive, productive, and relevant
- rely on peer-to-peer learning rather than formal teachers
- create spaces for learning where they are needed, rather than just using schools
- start learning from challenges that people face rather than from a formal curriculum

Leadbeater and Wong (2010) argue, “there is an ingrained failure in current education, education systems that were established more than a century ago underperform, mainly because they fail to reach and motivate large portions of the population” (p. 3). Their work debates four essential strategies: improve, reinvent, supplement, and transform schools and learning.

New Zealand education curriculum designers have responded to this philosophical shift with curriculum changes that place the ‘learner’ and values centred around life-long learning, at the centre of the education process, redefining teacher actions that promote 21st century learning (Ministry of Education, 2007, p. 34). Within the context of this study, I will use the term ‘21st century learning’ as the metaphor for all things that relate to preparing students for their future including the nature of the learning environment as a vehicle for learning for the future and a rapidly changing world.

Philosophical values associated with previous models of teaching and a revised emphasis on learner-centred self directed programmes presents a very different working culture and challenges spatial designers to design spaces suitable for a range of potential models of teaching and learning. Different kinds of schools are needed to teach new skills in new ways (Lackney, 2002). Schools such as this have been designed, built and inhabited in the last five years and will be the focus of this study.

Environmental challenges

There is a solid body of literature (Lackney, 2002a; Nair, 2002; Taylor, 1991/2002; Washor, 2003; Wolff, 2002) that clearly documents the problem that environmental designers encounter when they endeavour to design for educational purposes. One difficulty has been the problem of negotiating the various ways education is being interpreted and delivered across schools. The conventional wisdom of some school leaders is that educational facilities are about ‘containers’ in which students are treated as vessels to be filled (Lackney, 2002a). Until recently many educational decision makers and environmental designers believed that the design of these containers had little to add to the educational process (Clark, 2010).

The above authors were also pioneers for school environment change and continue to emphasise the influence school buildings have on student comfort and performance by focusing discourse on analysing the transformational effects of acoustics, natural light, colour, warmth, visual connectivity and ergonomic suitability. Nair (2002) argued that school buildings have been and continue to be places to warehouse children, and that new school’s just do it in more comfortable settings. He considers that although research is still sparse when it comes to evaluating the benefits of non-traditional learning spaces on learning outcomes, there is solid evidence that ‘progressive methods’ of education do work when properly implemented, so it makes sense that school facility design should follow suit and support the new teaching and learning modalities. With international developments in educational thinking associated with 21st century learning, and the successful implementation of new learning environments in other countries, there is now literature that supports and verifies the benefits of designing and building new learning environments (Bergsagel, et al., 2007; Fisher, 2005; Lackney, 2001b; Nair & Fielding, 2005; Semper, 2003; Walker, Brooks & Baepler, 2011; Wolff, 2002; Woolner, 2012). Over the last ten years the New Zealand Ministry of Education has invested in many new secondary schools, all of which have evolved ideas of modern learning environments. Now that these schools have been commissioned and are operational, there is a need to study the synergy of the designed
environment to meet the needs of 21st century learning and evaluate its success through the eyes of the inhabitants.

The focus of the study

The commissioning of modern learning environments (MLEs) in New Zealand that potentially act as a form of disruptive innovation suggests a need to study the impact of spatiality on pedagogy and learning, and about what students should learn in MLE, how we should measure the success of all this and most importantly how education can contribute to future design process. Therefore, research is required to critically examine the design practices of architects who have created the modern learning environment and to understand the teaching (pedagogic practice) and learning that these environments support. Understanding the design practices of the architects in creating the MLE (for what is, potentially, an idealised figure of curricula) and evaluating the practices of teachers and students who inhabit this environment, raises questions regarding the alignment of compatibility between spatiality for educational purpose and its actual functionality for teachers and learners. Indeed, such research may bring into question the very possibility that the traditional purpose of the classroom, and by extension, the school, is set to change irrevocably in the near future.

The focus of this study will examine and analyse the nature of purpose built designed environments, pedagogy, learning programmes and the perspectives of students and teachers who work in the ‘modern learning environment,’ and report on the progress of the designed modern learning environment to facilitate 21st century teaching and learning in two Auckland secondary schools. Data gathering will incorporate views from architects, school leaders, students, and teachers. The reason for studying secondary schools lies in the struggle these schools have in interpreting a dualist New Zealand curriculum document to make a transition from traditional industrial pedagogic models of learning (perpetuated by the demands of managing tightly controlled student assessment practices) to a 21st century learner-centred model that espouses more flexible, highly interactive teaching and learning approaches. Anecdotal information fuels assumptions that this forms a dichotomy and a dilemma for schools (as modern learning environments) endeavouring to develop future focused learning programmes.

Methodology

This study aims to define and evaluate the impact of MLE on teachers’ pedagogic practices and student learning. It draws on qualitative inquiries into the practice of designing modern learning environments and teaching and learning practices within these environments and relies on data gathered to support further discourse on the alignment between designed environment and pedagogy for 21st century learning.

Research methods will be used that offer the potential to penetrate deep to the human experience by tracing the essences of the practice of educational environmental design and the practice of teaching and learning in the created environment. Methods that emphasise narrative, discovery, and meaning rather than prediction control and measurement, (Osborne, 1994) are preferred as they enable the gathering of rich examples of lived experience. The approach chosen for this qualitative research study is based on hermeneutics, which is concerned with the nature of human interpretation and understanding, and lived experience. Hermeneutics allows participants to interpret what is perceived and to make sense of their perceptions (Ramberg & Gjesdal, 2009). Hermeneutic theory posits the hermeneutic circle (Ramberg and Gjesdal, 2009; Weinsheimer, 1985), which means that (a) all interpretation is biased by one’s previous experiences, world-view and personal history, (b) new perception and interpretation leads to new understanding and the creation of meaning, which (c) shapes a person’s beliefs, world-view and self-concept. The place of interpretation in hermeneutic processes means language is significant (Kinsella, 2006; Ramberg & Gjesdal, 2009). Hermeneutics as a research approach embraces the contextualised nature of interpretation and understanding and concentrates on historical meanings of experience and their developmental and cumulative effects on individual and social levels, (Barclay, 1992; Polkinghorne, 1983). Research findings are always dependent on the context of the research study, as well as the researcher, (Kinsella, 2006; Roberge, 2011). Denzin and Lincoln (2000) view investigator and the investigated as interactively linked in the creation of findings within the process of interpretation and interaction between the investigator and the research participants. As Jardin (1992) states:
Hermeneutic inquiry has as its goal to educe understanding, to bring forth the presuppositions in which we already live. Its task, therefore, is not to methodically achieve a relationship to some matter and to secure understanding in such a method. Rather, its task is to recollect the contours and textures of the life we are already living, a life that is not secured by the methods we can wield to render such a life our object.

This research is designed as a multiple case study (Figure 1). Case studies specifically enable the contextualisation of the phenomenon of interest (the design and educational intentionality of an MLE), and are most commonly applied where the phenomenon of interest is complex and highly contextualised, with multiple variables unsuitable for control (Yin, 2003). Case studies provide the researcher the opportunity to develop a deeper understanding (Berg, 2007) of the way individuals perceive their professional connection with these environments. Two case studies will provide sufficient evidence to understand the hidden meanings and essences of participant experiences inherent in designing a modern learning environment that represents a particular style of education (for 21st century learning), and the way in which the inhabitants are prepared for, and practice in such an environment.

**FIGURE 1** - Modern learning environments as an agent of teaching and learning.
References


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