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# Designs for Learning in the Knowledge Age

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PEB Exchange Programme on Educational Building

# DESIGNS FOR LEARNING IN THE KNOWLEDGE AGE

By Dr. Kenn Fisher

This overview of designs for learning in the Knowledge Age briefly explores the relationship between learning and the built environment, and the role of teachers in designing educational spaces; it calls for a collaborative campaign and suggests future action.

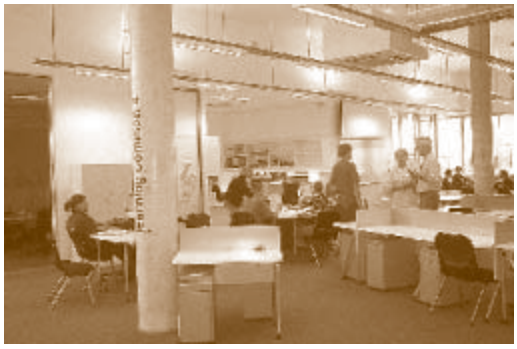
## The relationship between learning and the built environment

It is in the formal environment of the classrooms and the informal environment of the campus grounds that architecture is lived, learnt and experienced by teachers and students. I believe that our architectural vocabularies and spatial literacies are shaped during these formative educational years and that school, college and university architecture sets the spatial benchmark for environmental quality later on in our adult lives. I also believe that if we have positive experiences in our learning environments then our expectations regarding high quality public spaces will be enhanced resulting in better architectural outcomes across the whole community. Further, educational architecture sends a powerful message to the community about how we value education as a fundamental part of our culture, society and economy.



The impact of the physical environment and the rapid changes in information and communication technologies on learning has spawned hundreds of studies by educational researchers worldwide.[1] Most of these, however, are quantitative studies which attempt to link test scores to building condition, with little attention paid to qualitative perceptions of students and teachers about their learning environments.

The "actuality", or phenomenological experience, of the interaction between learning and the physical environment has only really been extensively explored using the natural environment and the school grounds through such agencies as Learning Through Landscapes in the United Kingdom and the Learnscapes Trust in Australia. In a similar vein educational architectural academies should also be exploring is the interactivity between the built environment and learning through action-learning projects which engage students and teachers in the architectural process. It is only through living, controlling and shaping learning spaces and places that they will become real and not simply experienced as passive containers for learning.



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## The role of teachers in designing educational spaces

There has been little change in the concept of a classroom over the last 200 years or so. This covers the agrarian, with the ecclesiastic classroom; the Industrial Revolution, with its Taylorist notions of control to produce compliant factory workers and, more recently, the Information Age with its flexible learning spaces. Yet the immutability of the classroom has continued despite the attempts of designers and educational authorities and their constant struggle for change. Teachers in all educational sectors will continue to revert to the time-tested concept which is the classroom unless it can be demonstrated that alternative physical learning environ-

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ments can positively influence learning outcomes. There has been no sustained attempt at a holistic change to approaches to educational reform that integrates all the forces acting on it, including the power of space.

Now, in the Knowledge Age, learning is becoming interdisciplinary, collaborative, problem- and project-based. It also involves learning in the community and in industry, with sustainable personal and social communication being the key to such transdisciplinary activities. Neither Internet chat rooms nor classrooms alone can achieve this objective. Pedagogical concepts such as constructivism (negotiated individual curricula), multiple literacies (including spatial), multiple intelligences,[2] distributed learning (facilitated by mobile and wireless communications), integrated curricula and worked-based learning will all require a rethinking of the spatiality of learning. However, innovations such as the Australian Science and Mathematics School and Mawson Lakes in Adelaide, which attempt to embrace these ideas, are futile unless they become part of the mainstream of schooling. The ideas demonstrated in these prototypes must be integrated into all schools, colleges and universities for there to be any sustainable concept of school reform.

When closely involved, students and teachers offer passionate views on classrooms, corridors, playgrounds, cafeterias, performance theatres, laboratories, studios and school grounds and campuses. These are views and voices that should be heard, as they are the views of those who inhabit and use the spaces and places we design for them. I urge all those who are involved in educational architecture to engage, embrace and encourage students and teachers to collaborate with the greatest possible degree of inclusivity.

1. Fisher, K. (2000). "The Impact of School Design on Student Learning Outcomes and Behaviour", Schools Issues Digest No. 1, DETYA, Canberra.

2. Gardner, H. (1999). *Intelligence Reframing: Multiple Intelligences for the 21st Century*, New York, Basic Books.

## A collaborative campaign

A campaign which relates space directly to changes in pedagogy, curriculum, and information and communication technologies, and which places place and space firmly on the agenda of teacher professional development, is critical to this collaborative project. Architects must engage directly with teachers and academic staff for any real and sustainable change to classroom design and campus planning. Such a campaign might include:

- Presenting innovative architectural concepts to professional teacher associations and inviting panels of teachers and academics, not just principals, educational administrators and vice chancellors, to meetings of educational architects to discuss issues around rethinking school, college and university spaces and places.
- Using art in architecture, art in public places and artist in residence programmes on educational campuses to increase interest and hands-on involvement in architecture.
- Developing a curriculum for a one-day teacher/academic professional development programme on place and space in education.
- Launching an initiative which focuses on the built as well as the natural environment and which links the two, such as the School Works project in the United Kingdom.
- Using educational architecture as an educational tool to demonstrate environmental sustainability.
- Sponsoring a demonstration project which shows how a "school of today" can economically, environmentally and socially (the triple bottom line) be converted to a "school of tomorrow", rather than focusing only on new schools.

I think that the answer to why there has been little advance in educational architecture is the issue of ownership. Students and teachers need to "own" the architecture and the spaces and places they learn in. But, before they can do that, they must understand what it is, how it works, what impact it has on their lives and how they might be able to influence it.

Those of us that have the privilege to be commissioned to create these learning environments also have the responsibility to use these projects as a teaching and learning instrument for both teachers and students. These projects are rare in the life of a school student, indeed in the life of a teacher. Such opportunities must be capitalised upon to not only increase the spatial literacy of both teachers and students but also so that educational architecture becomes a powerful means of demonstrating that education and learning is indeed a critical, if not well understood, part of our social capital.[3]

## Future action

It is clear that we still need creative designers to lead, to envision, to champion and to deal with the authorities, builders, financiers, project managers, the design process, the materiality and so on. But we also need to share the ownership of the process and the product. Schools, colleges and universities can be viewed as cultural interpretive centres. We should be pursuing the development, the production and the experience of interpreting our future built environment, for a knowledge society, actively with its current and future citizens, rather than simply for them.

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*This piece is an edited version of a longer article published in its entirety in* SA Architecture Journal*, in 2003.*

3. Fisher, K. (1998). School buildings as social capital. *The Investment Appraisal of School Buildings*, Luxembourg, OECD/European Investment Bank.