

# Architecture of Learning

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I never teach my pupils. I only attempt to provide the conditions in which they can learn.

— Albert Einstein

The university campus provides a rich backdrop for learning, meeting, thinking and social interaction. Although this has always been the tradition of our institutions, today the need to move beyond structured and formal teacher-led and directed education is of increased importance. It is, however, often not reflected in the design of spaces that are provided to facilitate new processes of learning.

Contemporary learning reflects a departure from the pedagogy of the past. Today's students have attitudes, expectations, constraints and methodologies of studying that differ from the previous generation.

An understanding of the shifts that are taking place in education is therefore essential in providing learning facilities. New emerging technology, generational change, commercial pressures, globalisation and the expectations of society are all combining to require a re-think of traditional teaching and operational paradigms.

The embrace of technology and the increasing mobility and connectivity of society, both physical and virtual, requires new models and spatial experiences to facilitate learning. Modern pedagogy is increasingly focused upon collaborative learning by doing rather than learning by listening. This is an important shift of emphasis and one that has a direct impact on the architecture of learning. Traditional physical settings that typically characterise the design of teaching spaces, lecture theatres and classrooms constrain new and innovative approaches to learning, communication and knowledge exchange.

Historically, the lecture theatre or classroom has been the forum for structured learning and direction, and the primary focus for university attendance. New learning technologies and approaches have emerged that create opportunities to complement traditional forms of teaching. This, however, creates challenges for universities and educational institutions, as they increasingly seek to adopt such new approaches and create new and more effective collaborative pedagogical environments of innovation and excellence.

It is clear that the design of learning environments plays a major role in the effectiveness of learning and impacts cognitive and behavioural responses. The contemporary university must challenge convention, and provide flexible spaces that accommodate diverse experiences, recognising that people learn in different ways.

Teaching and learning facilities need to embrace key issues of flexibility, comfort, stimulation, technology, interaction and engagement.

It is important to recognise that learning does not only happen in the classroom or lecture theatre, at prescribed times, delivered through a lecturer who provides a transfer of information through structured, instruction-driven learning; it is also a highly social experience of knowledge exchange gained via peer participation, chance encounter, spontaneous meeting or informal interaction. In many respects, this is increasingly becoming the primary benefit of attending a university rather than study in isolation.

In recognition of the importance of multidisciplinary interaction, knowledge exchange, and the campus experience, the design of educational buildings has evolved. Accordingly, today's learning must combine traditional "talk and chalk" approaches with an additional focus on active, participatory, social learning in environments that overcomes the constraints of the traditional classroom and lecture theatre. A wide array of technology-enabled spaces and experiences is required in order to balance the formal with the informal, the traditional with the contemporary.

The proportions, furniture arrangements and selections, technology, acoustics and environmental conditions of the contemporary learning spaces including lecture theatre, seminar and classroom space, for instance, require careful consideration to facilitate a range of teaching methodologies and learning experiences.

Traditional layouts of auditoria and lecture theatres have rarely provided for social engagement and are not conducive to group discussion. The design of the contemporary lecture theatre should no longer be singularly focused with the lecturer as sole provider and source of information. The spatial proportions, furniture selection, and lighting approach must facilitate discussion, active participation and engagement within the audience. Considered spatial arrangements and proportions must enable interactivity, discussion and group work in lectures, thus engaging students and improving the learning experience.

Radial arrangements of comfortable seating in raked lecture theatres, for example, as well as horse-shoe tutorial/case-room configurations, where teaching "in the round" with the audience in close proximity to the speaker, create an intimate environment that encourages active participation and discussion.

Traditional design criteria, however, also continue to apply. The importance of sightlines remains fundamental, as is acoustics. Attention to these issues will ensure that the lecturer can achieve a comfortable conversational relationship with the audience rather than reliance on systems of voice augmentation.

Similarly, other teaching environments such as flat-floor classrooms must also depart from static, rectilinear, single orientated, uniformly lit arrangements, and provide learning within flexible and inspiring environments.

As technology is becoming increasingly integrated within the teaching and research experience, the built form must recognise the associated requirements to maximise its benefit. Colour and lighting are key issues of consideration for the design of technology-enabled spaces. Today's equipment, however, does not require such rigid blackout criteria as before, enabling spaces to incorporate natural light and view—the importance of which cannot be underestimated in controlling fatigue and concentration.

It is not only the formal teaching facilities however that must embrace the latest pedagogical approach. Wireless connectivity and virtual communications have liberated and extended the learning experience to complement the structured learning of primary teaching facilities. Electronically networked support areas offer flexibility to maximise learning, social interaction and the collegiate experience. The importance of support spaces for the primary teaching/learning areas, including circulation systems, external landscaping, corridors, breakout, learning commons and group study areas, therefore cannot be underestimated.

Unlike commercial developments where traditional measures of efficiency are of prime importance, university buildings need to carefully consider a “duality of purpose” whereby circulation and support facilities contribute to informal teaching, and knowledge exchange. Accordingly, support areas must not only facilitate the changeover of a large number of students between lectures, but also be carefully proportioned to provide informal meeting space and breakout that will enhance interaction.

All facilities must offer a range of pedagogical possibilities to motivate students within healthy environments full of fresh air and natural light, which are a delight to inhabit. Clearly a one-size-fits-all approach is not the answer, nor is it one that is specific or single-purposed. Formal and informal spaces need to provide the backdrop for learning, enabling both educator and student to configure and tailor environments to suit specific need that may vary from week to week and continue to evolve over time.

To embrace connectivity and flexibility, it is of vital importance that the infrastructure is the most reliable and user friendly. Sophisticated technology that cannot be easily used or is unable to be readily adapted to meet the demands of tomorrow will result in unsuccessful buildings. It will inhibit the dissemination of knowledge and learning, with inefficiencies resulting from operational aspects related to the time required for set-up and preparation.

The continued advent and increased speeds of reliable wireless networking, however, will continue to liberate the physical restraints on computer-based teaching. Such potential is particularly attractive when combined with online teaching methods and portable technology that allows computer-based teaching to no longer be confined to purpose-built facilities. The design of spaces should emphasise the requirements of students and staff, rather than the needs of the equipment.

All campus areas should be considered as opportunities for learning and research. The modern educational institution must focus upon the process of learning throughout. It must combine the structured and unstructured, the formal and informal, the expected and unexpected, and the physical and virtual within an uplifting environment characterised by fresh air, comfort and natural light.

Today’s learning environment is not a singular building but must be considered as a cohesive campus that provides a complementary and interrelated array of spaces, to facilitate learning and social experiences within an integrated learning environment. Flexible internal and exterior spaces, accommodating different approaches and function, facilitate the process of effective learning. In many ways this parallels the changes to the contemporary workplace and associated trends throughout industry and the wider community.

The function of educational facilities must therefore also extend beyond the constraints of envelope, and provide important enhancements to the public domain and campus life. Spaces between developments are of equal importance to the design of individual buildings.

A cohesive campus requires a sequence of hard and soft landscaping, to create informal complements to the primary teaching facilities. A technology-enabled and connected, integrated landscaped campus extends the learning experience fostering informal knowledge exchange, chance encounter and casual conversation, supported by the all-important provision of food and coffee that characterises contemporary student life.

Educational developments must provide important contributions to the wider campus experience projecting a new ‘built pedagogy’ that represents and underpins the vision and architectural embodiment of the educational philosophy of our institutions.



The architecture of learning therefore remains a significant issue demanding serious attention. The spaces created must seek to inspire all students to fulfill their potential in order to benefit the wider community.

Its importance to contemporary society cannot be underestimated.

architecture  
interiors  
urban  
landscape