



**POLICY ON
FUTURE DESIGN
OF TEACHING SPACE**

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Teaching and Learning Committee

Introduction

This policy is the result of a reappraisal by the University of its approach to the future design of teaching space. Its development has been precipitated by two events during the course of 2004. The first of these events was the debate which arose about the design and intended use of a new large teaching space in the university's most recent capital project at Kelvin Grove campus. The second was the emphasis being given in the university's planning during 2004 to the need to combine physical and virtual concepts in a more integrated way.

These two developments indicated that it would be desirable to develop a more considered approach to the future design of teaching space, and in particular to avoid any future situation in which assumptions about past practice and traditional pedagogy might be seen as the only basis for decision-making, particularly the kind of decision that can sometimes be required under pressure of time in a capital project.

Teaching and Learning Committee therefore established a working party with terms of reference (appendix A) to consider and propose a policy on the design of future teaching and learning space in capital and refurbishment projects at QUT.

Policy approach

This policy considers firstly, the main contextual issues for teaching and learning at QUT in 2005. It then goes on to consider the implications of these issues for the design of teaching space divided into several principal categories. In doing so it describes trends which the university should consider in designing for the future. It should be noted that one of the most significant current technological trends concerns increased mobility and flexibility. This brings with it the possibility of more flexible deployment of technology in spaces which hitherto have not been hospitable to such deployment, such as design studios.

It should also be noted that the scope of this policy is intended to apply to spaces which can be considered as "teaching spaces". Notwithstanding the argument that all spaces involving teaching are also spaces where fundamentally what is occurring is learning, the differentiator is the capacity of a QUT lecturer/staff member to book or otherwise use/assign space for teaching purposes. Coverage is therefore not intended for learning spaces for more general student study, nor library design. These are the subject of separate standards and approaches.

Context

QUT continues to grow. Despite enormous changes made through the introduction of technology in a variety of ways, the lecture/tutorial model, timetabled into semester approaches, and involving large numbers of students attending campus, continues to be a dominant mode of course provision at QUT.

It is well documented that students are busier than ever. The notion of the full-time student whose time is dedicated exclusively to student life is dating. In recent years some lecturers have reported significant challenges in maintaining student attendance at lectures. To some extent attendance is affected by competing demands on student time, particularly those in part-time or full-time employment. However, some analysis suggests that where students can acquire elsewhere what is provided in lectures, they will choose to do so.

The issue of lecture attendance is not a new problem. In the past it has been linked to quality and relevance of lecture content. Concern about the quality of the lecture experience has a long history in higher education, and led, decades ago, to conscious and publicized effort to improve teaching quality, particularly given the lack of any qualifications framework or process in preparation for university lecturing.

Attendance trends are not clear. Student opinion, including that expressed during the process of reviews of faculty, has indicated that technology can have a counter intuitive effect on the value of attending lectures: namely the adding of value to the time spent in the lecture by having available the supporting material/resources beforehand. Pressure of student life means that the lectures must add real value.

For over ten years the literature of higher education has demonstrated a continuing preoccupation with the coupling of technology and the greater capacity to deliver courses flexibly. For an institution which has a high commitment or dependence on study at a distance, the simplicity of the argument for the harnessing of technology has appeal.

But, the review of online teaching at QUT in 2003 indicated, some thought is required in terms of understanding the development and roll out of online teaching in a large institution which identifies itself as continuing a significant "on campus", "hands on" and practical emphasis. The online teaching review and the subsequent debates have given significant time to this issue. In addition, more recent work through the cooperative activity of the ATN, has indicated that relatively speaking the adoption of online teaching is more widespread at QUT than average, though conversely there is evidence pointing to less development of the technology in a way that deeply affects curriculum, and learning approaches.

In the two years since the online teaching review, the rapid development of mobile connectivity, including the installation on university campuses of wireless internet connection, has taken place.

Taken together these contextual factors demand of QUT a more specifically stated policy context for future teaching space design.

Design Principles

In addition to the social and sectoral factors outlined above, it is also worth reviewing work that has been done on design principles that improve teaching and learning. It is hard to improve on work done in the US in recent times on this, in which six principles, simply stated, can be enumerated. These are

1. Pedagogy as the driver. All design should assume that the empowering of teaching staff in meeting their instructional requirements is a fundamental principle.
2. Flexibility. Design should include many options and exclude few.
3. Interaction. The possibility of creating collaborative learning environments with the instructor acting in a guiding or mentoring role should be given weight in design.
4. Simplicity. Whatever factors go into room design, the notion of simplicity in exercising control over events in the room and technology should be paramount.
5. Connectivity. All classroom design should be informed by a view about ever increasing levels of connectivity amongst students in the room, and between the room and elsewhere available on or through the university network.
6. Costs. All learning space design is constrained by affordability. However the University can choose to commit to the principle (as it has), that it provides a significant number of spaces which deliver a minimum common level of these design elements rather than a significant investment in a "show piece" or "VIP" facility for a campus or institution.

It can be seen that over the last decade, at least with its approach to tiered lecture theatres, QUT has embraced *some* elements of these principles above. The widespread availability of the same standards for lecture theatre controls, and equipment for the provision of visual and audio support in lectures has been a recognised feature of the approach. If pedagogy is to be the driver, then we need to move beyond thinking of the students as simply 'on-campus' or 'off-campus', to consider how to structure learning experiences that optimise access to necessary information and useful conversation/engagement.

Categories of Teaching Space

QUT's policy covers teaching space which can be described in four categories. These are:

- lecture theatres
- flat floor classrooms
- computer laboratories
- specialist, discipline based spaces requiring integration of approach

For each of these categories below a definition, a discussion of rationale and demand drivers, pedagogical needs, student needs, and technology and teaching tools is provided in brief form.

Lecture Theatres

Definition

Lecture theatres are large formal spaces, tiered and with most seats fixed. They seat around 100 students or more and the focus for students tends to be on an individual instructor at the front of the room.

Rationale and demand drivers

Lecture theatres allow for the teaching of large numbers of students, particularly in undergraduate classes, and are cost efficient in terms of student to teacher ratio.

They also provide an opportunity for showcasing teaching or a particular topic or process. Teaching in a lecture theatre allows an instructor to model an approach to learning and to model the performative aspects of teaching to other staff (such as sessional staff)

Because lecture theatres allow all students in a large cohort to be together they are also an opportunity to develop a shared ethos and learning experience amongst a cohort, not just within a discipline but within a year level. In this sense they also provide for equity of experience as all students come together.

Pedagogical needs

Given that lecture theatres do provide a space for teaching as performance, these pedagogies need to be supported by lecture theatre design.

The efficiencies in student to staff ratios can allow for high quality experiences with appropriate investment in exciting technology – large screens with high impact are the mark of a lecture theatre.

Teaching can be inspirational and motivational in lecture theatres and, used in a particular way, these facilities do not preclude the possibilities of interaction among students and between students and instructor. Conversely, poor use of

the space (poor lecturing which can be generally defined as that lecturing which fails to engage most or all students in the lecture), can reinforce a powerful negative effect on learning and on the student experience of QUT teaching.

Engagement within these spaces can be turned into "instant" research opportunities where a large cohort can be polled in one space (obviously assuming that issues of ethical clearance have been canvassed).

Student needs

Some students have an expectation of lectures as a centrepiece in the experience of "going to uni". As mentioned previously, equity of access can be achieved through large class teaching. It also allows for students who enjoy the anonymity of being in a large class.

Developing a sense of social and cohort identity as a university student in a particular course, can be facilitated in bringing together students in lecture theatres. However if the approach is not sensitive to this aim, lectures can increase a sense of anonymity and isolation.

When combined with antecedents (such as online notes available beforehand) lecture theatre teaching takes on a particular role as part of an overall learning experience and can be a highlight of the weekly experience of engagement with the university.

Technology and teaching tools

The technology and teaching tools in lecture spaces focus on enhancing the delivery – there must be a lot up front. Connectivity both within and beyond the lecture theatre can be achieved in lecture theatres. Example technologies that provide learning opportunities include SMS, Keepads, Laptops.

Lighting and projection are particularly important in lecture theatres. Lighting contributes to the experienced purpose of teaching in these domains by highlighting where attention should be focused. The standard for MELT installation is moving towards dual projection in spaces of this size to achieve appropriate line of sight.

Flat Floor Classrooms

Definition

A flat floor classroom is a space for one to many teaching with flat floor flexibility.

Rationale and demand drivers

Flat floor classrooms provide a flexibility of approach as compared to lecture theatres. They require high initial (capital) costs but are less costly to maintain. These spaces are growing in interest and demand for teaching staff at QUT.

Pedagogical needs

Flat floor classrooms are spaces in which interaction and group work is encouraged. Group work must be managed so that learners can effectively engage in such spaces, filtering out background noises and focusing on task. This can be an acoustic challenge in flat floor classrooms and results in an effective limit on the number of learners of between 50 and 100. This limit is further reinforced when the space has shiftable furniture which becomes problematic as the class size increases. Arrangement and rearrangement practicalities must be considered in design of such spaces. Protocols for engaging with technologies should inform pedagogies in use – student control of technology can be used to enhance the learning experience if planned for.

There is a need for tutors and lecturers to develop capabilities in using these spaces most effectively.

Student needs

Flat floor classrooms should be designed as stimulating and interesting places to learn including using bright colours, considering acoustic issues, maintaining student attention through thinking about line of sight issues and incorporating comfortable and easily movable furniture. Issues of security and safety must also be considered.

Technology and teaching tools

The QUT expectation is that flat floor classrooms will have a minimum of a full MELT, which should be appropriately placed within the space so as not to obscure or limit group engagement with the instructor or the projected image. As new applications are developed shared teacher/student/group control of technology will become more prevalent and must be considered in room design. These may mean the need for multiple or portable technology.

There is a need to consider increased use of student controlled technology which leads to the need for distributed power and considerations of access to wireless. In some universities flat floor spaces have been configured with a hierarchy of screen based interactions with the instructor in control of a “master screen” which can capture the “lead screen of each student group (4-7).

Computer Laboratories

Definition

[note: in the following text, computer laboratories are considered in their role as spaces bookable for teaching purposes, not as sites of study akin to library space. This is not a policy on learning spaces in general]

Computer laboratories are spaces designed to facilitate easy access to a number of computers. They are usually associated with related support facilities like printers, scanners and associated support services.

In future, computer laboratories may become dedicated spaces designed, with relevant flexible infrastructure, to enable staff and students to engage specifically in technology assisted learning, both individually and in groups. The space continues to enable easy access to associated support services and opportunities for students to interact in both a learning and social manner

Rationale and demand drivers

Computer laboratories provide economical provision of access to technology and therefore to core learning resources. Given the diversity of student access, they also ensure a minimum equitable standard. The QUT approach to managing computer laboratories allows for the management of changing technology demands and to ensure access to higher end software, hardware and media that would not be possible for individual teachers or learners.

Computer laboratories provide a continuation of online learning and studying experiences on campus.

Pedagogical needs

The driving pedagogical need is to provide an environment for learning that can include simulation and experimentation, computer mediated learning with resultant development of technological literacies and active learning experiences. In particular computer laboratories can be used for problem based and cooperative learning with access to technology.

Student needs

Aside from the learning needs identified above, computer laboratories also serve an administrative function. They provide access to digital resources (such as the CMD), student administrative needs (such as timetabling, enrolment) and opportunities for communication among students and between student and lecturer.

Computer laboratories can provide a recreational or social function in connecting students to campus and to each other.

Computer laboratories can provide mobility to and from other spaces - university, work, social. As new pedagogies develop, teachers may construct learning experiences that range across formal –formal collaborative –Informal collaborative – contemplative, all within a single learning activity (for example learners begin with a lecture, move into small group activities, and from here into individual research).

Technology and teaching tools

The technology of these spaces is provided according to the SOE support environment of QUT with Faculty and discipline specific requirements installed in spaces assigned to Faculties as appropriate. Considerable effort goes into the implementation of standard approaches to “software image management”.

Specialist Teaching Spaces

Definition

Specialist teaching spaces take a range of forms in different discipline contexts but they can be characterised as formal, bookable spaces, for hands on observation, experimentation and participation with specialist equipment or experiences. They include studio, laboratory, clinics, performance areas, and so on.

Rationale and demand drivers

QUT’s reputation and practice in the development of “Real World” practical experiences mean that specialist teaching spaces often provide key sites for learning by doing, for engaging in the practices of our disciplines and professions that characterise the real world.

Pedagogical needs

Given the need for these spaces to be characterised by learning by doing, the pedagogical needs include the ability for learners to work in small groups but to be addressed as a whole. This may also mean that there is a need for movable partitions for small groups to separate themselves flexibly from a larger group.

There is a need for space for learner engagement with equipment or experiences or spaces, for teachers and learners to be able to move around. Space is also required for displaying and sharing ideas by a visual means, thus in these spaces consideration of the vertical dimension in design can be important.

Research and research training requires particular consideration in thinking about specialist teaching spaces and new pedagogies emerge.

Student needs

Students in specialist teaching spaces need to be able to move around to pieces of equipment or spaces that have specific purposes or they may need to move equipment or supplies as the focus of learning activities changes.

In some cases specialist teaching spaces are areas of creation or construction of student work that spans across a period of time (weeks or months). In this case there is a need to consider storage and security of student work. There may also be a need to consider student access beyond formal and bookable times so that they can continue to work beyond formal classes.

Health and safety are important considerations for specialist teaching spaces that can contain equipment and supplies or encourage activities that have some element of risk.

Technology and teaching tools

Technology and teaching tools may include heavy equipment and supplies, movable stations with student consumables or work.

There is a need for a line of sight from different areas of the space for whole group focus (this assumes some display or projection area).

As with flat classroom spaces there are possibilities for technology to be used to connect small groups to a whole group (products, notes, etc) to display or project.

Similar considerations for power, datapoints and wireless hold as for flat floor classrooms.

An important point for QUT is to understand, develop and exploit the potential for wireless use to foster a significant harmonization between the need for specialist teaching space to serve the imperatives of its discipline area, and the engagement of that space with digital capability. Architecture studio is a good example.

In this way QUT hopes to be differentiated by the way it blends its famously practical approach and its identity as a university of technology.

Policy Position

QUT is committed to the most flexible approach that can be developed in view of the commitment to the integration of physical and virtual environments, and recognition of new styles and forms of teaching activity in designated teaching spaces.

It is not intended to completely eliminate the possibility of future need for large lecture theatres, provided that the design principles, as well as the rationale for such lecture theatres, is established in a sufficiently durable way to justify the investment. The default position in the future design of teaching space, or the major refurbishment of existing buildings, should be the development of flat floor flexible space, unless a specific and enduring deficit in lecture theatre provision has been identified at a campus.

The recognition also in this policy, that QUT's positioning and contribution in terms of its courses being closely aligned with industry and the professions, and therefore the need for the provision of appropriate practical and specialised facilities, combined with its role as a University of Technology in deploying mobile access which is the least disruptive to the practical design of vocationally oriented teaching spaces is a major priority for the university.

Conclusion

This policy on future design is adapted and incorporated into the appropriate design specifications of the university.