

Chapter Six Managers Checklist

Learning space design is a complex and expert task. Many projects involve refurbishment of existing estate, meaning that the options could be limited. Rebuilding, where the interior of a building is removed and rebuilt, and new buildings can provide more flexibility, but geography, regulation and legislation will still limit what is possible. To help senior managers work within these limitations and still produce successful outcomes, this study highlights a number of critical success factors. In order to assist senior managers in establishing that they have addressed the factors critical to success this chapter lists those factors under the following headings:

- Strategic Drivers
- Project Management
- Practical Aspects of Learning Space Design
- Detailed Design Considerations
- Working with External Organisations
- Commissioning: implementing, ownership, maintenance
- Procedural Checklist

However it is important to remember that all projects are different and a generic checklist such as this may not cover all aspects of all projects.

Strategic Drivers

For any innovative learning space project to be effective it needs to be driven by a combination of operational and pedagogic requirements, as described in Chapter Four on strategic management, namely:

Operational drivers – these might include the need to refurbish poor estate, meeting SENDA (Special Educational Needs and Disabilities Act) compliance, consolidation of sites, special projects, changes in student numbers, appropriate use of new technology, meeting student expectations and changes of student finances and life-styles.

Pedagogic Drivers – these come mainly from an institution's academic strategy. Faculties, schools, departments and individual subject teachers will all input to this and will be delivering that strategy on a day to day basis.

The strategic aspirations of all the key stakeholders will be more easily delivered if the estates management strategy and the academic strategy are well co-ordinated and complementary.

Project Management

Formal project management methodologies are "principally involved with the introduction and management of change" [Project Management and Project Network Techniques / Keith Lockyer, James Gordon] and thus help to bring about change in an organisation. Project management need not be used as a method of managing the routine business of an organisation, and in some cases estates projects may be part of the routine business. However, when estates projects relate to the innovative use of learning spaces and seek to bring pedagogic benefits then change is inevitable, therefore a project management process is important.

To help bring about that change it is recommended that, regardless of the precise methodology employed, a high-level guiding coalition, or 'Working Group,' is set up to facilitate the project. The working group needs the authority, both financial and managerial, to see the project to successful completion, including final handover and commissioning.

The working group needs the following elements to ensure that the project can address all the interdependent aspects of the design and implementation of the learning space and its associated facilities.

Leadership with appropriate resources and authority - The working group should be led by a person with an appropriate level of authority and influence, and with access to the necessary financial and other resources. This person should be senior within the organisation, and may, particularly in larger organisations, have specific responsibilities for learning space projects. This person needs the authority to make the decisions needed for the project to succeed, and as chair of the working group, needs to create a shared sense of urgency and purpose. Experience shows that in a successful project, the working group leader needs to have a clear overall vision of the project requirements and that he or she should champion all the agreed aims of the project.

Membership to cover all the necessary skills - The membership of the group should cover all the necessary skill sets, and all group members should take responsibility for understanding all the relevant issues. Where the primary purpose of a project is the development of new learning space then the pedagogical needs of the ultimate users should be seen as central to the project. The pedagogic experts within the group may lead the pedagogic discussion and debate, but all members of the group should seek to understand the pedagogy and build it into all aspects of the design process. The group should ensure that the following have been considered; building design (include internal specification such as furniture, lighting and ventilation), learning technology, equipment and connectivity, the role of learning support staff (this would normally include learning technologists and information professionals), financial management and the administrative aspects of learning spaces such as timetabling, student records etc, and last but not least the staff and students who will be using the space.

Understanding of the key drivers for the project - The group needs to be clear about the key drivers for the project in order to develop a shared sense of purpose. To have a hidden agenda is likely to be counter-productive, as the working group are unable to support an agenda that is hidden from them. Understanding all the key drivers, pedagogic and operational, will also help the group to make the decisions needed to carry the project to a successful conclusion.

Represents all the key stakeholders - All the key stakeholders must be represented in any development project. In a learning development project the stakeholders will include, in no particular order; estates managers, learning support staff, IT staff, accommodation support staff (such as media services, timetabling and room bookings), teaching staff and students. In all the institutions that demonstrated a good track record for innovation there was strong evidence of good communication among the key stakeholders. This led to mutual trust and understanding, which in turn reinforced the shared sense of purpose.

Working with External Organisations

It may be that some learning space projects can be completed entirely by people internal to the institution, however in the majority of cases external organisations will need to be involved. These organisations will bring specialist expertise and knowledge with them, which even if not essential will considerably enhance the skills of the project team. By the same gesture external experts and specialists will need to be aware of the knowledge and expertise within the organisation. Those participating in the survey with recent experience of working with external contractors were clear that all parties had to be willing to learn from, and respect the knowledge and expertise, of each other.

Central to the process of bringing together the whole project group, and therefore getting the best out of them, is the project manager. This may be someone from within the institution, or may be an external consultant appointed for a particular project. The project manager should have experience of learning space projects and should understand the specific issues of learning space design.

The overall purpose of any learning space project is to ensure that the end result meets the initial requirements, is fit for purpose, is built to the required specification and is delivered on time within budget. Formal project management methodologies, especially for large scale projects with external organisations, can be a powerful tool in helping to ensure that this happens. Furthermore such methodologies help to keep an ongoing, written record of what each party is expected to be doing, when they are doing it, what needs to be in place and who is going to pay.

At the outset it is essential that the project is fully specified. This specification should clarify the purpose of the learning space, the envisaged usage and users, the overall budget and the over project timescales. The specification should be sufficiently detailed to ensure that all groups understand the project and their role within it.

Practical Aspects of Learning Space Design

The focus of this study is on the influence of learning technologies on learning space design. This section therefore focuses primarily on those aspects of learning space design that relate to the use of learning technologies, although these can not be totally separated from the rest of the design process.

Before a learning space project can begin the physical context must be fully understood. The location and footprint of the learning space need to be determined and these need to be clearly described in relation to the local geography, to other buildings and structures and the overall institutional layout. Having placed the specific project into a physical context the following factors should be considered:

Supplies and Services – It is essential to consider the supplies and services that need to be available within the learning space. Taken in the broadest context supplies and services include utility services, such as gas, water and electricity, access to the space, including, roads, pathways and corridors, and power, data and other telecommunications. An understanding of the broad requirements in relation to services will shape both the planning and budget requirements. Architectural norms for provisions of services will apply to most aspects of the building but ‘purpose specific’ aspects of the building need to be articulated clearly as they may have a significant impact on the building design. For example a permanently installed audience response system could considerably increase the need for provision of cabling.

Internal Layout - The internal layout and facilities within a building together with the overall shape and architectural features influence the overall feeling, ambience and usability of the building. There is a close relationship between the design and practical implementation of a building and the way that it operates as a functional learning space. The detailed internal design needs to be undertaken taking into account all aspects of the structure, the furnishing and equipment within the space. Specific factors to consider may include lines of sight, 24/7 access requirements, acoustic and ventilation requirements, numbers of users and patterns of usage over time, vehicular traffic and pedestrian traffic.

Sustainability – the sustainability of learning spaces is also important to consider. Factors such as running costs, durability and reliability of equipment and furniture, environmental impact, future refurbishment all need to be considered. Intelligent buildings may be able to provide a good level of environmental control at a relatively low cost, however this may impact on the initial building costs and may be less flexible than more traditional heating, cooling and ventilation systems.

Security – the security of new high quality learning spaces is an issue that needs a careful and balanced approach. An attractive learning space, especially if fitted with high quality facilities and good connectivity, will be in considerable demand by users, and those users may wish to study at anytime of night and day. This poses a problem for security and safety. Clearly technology can be employed to assist, such as the use of video surveillance of users, swipe card access locks, radio frequency identification (RFID) tagging of moveable items within the space, etc. However there is a balance to be worked out here, as most of these ‘locks’ degrade the environment, especially in terms of flexibility and ease of use. Depending on the location and local culture, the space may easily be occupied by ‘outsiders,’ that is members of the public who are not entitled to use the space. These people may be friends of the ‘true’ user. It is important therefore that the users recognise their responsibility and do not abuse their privileges by allowing access to those not entitled to use the space.

Detailed Design Considerations

To help us consider some of the more detailed design considerations learning spaces can conveniently be grouped, as in other parts of the study, into four broad categories, namely:

- Teaching Spaces
- Open Access Spaces
- Social Spaces
- Other Learning Spaces

The learning technologies that might be used in each of these types of spaces are discussed in the chapter two. But when considering factors such as size of places, distance from screens, relative positions of equipment and lines of site a comprehensive search throughout the UK and overseas has identified that authoritative information is hard to find.

Several universities in the United States have published guidelines on their websites, and it has been possible to identify a trend towards a standard format. In addition a group of seven US universities collaborated to create and publish a “Classroom Design Manual.” In 1996 “Hard Facts on Smart Classroom Design”, [Daniel Neimeyer 2003; University of Colorado], was written by a lecturer with 30 years teaching experience and includes the technical and physical specifications, as in the Classroom Design Manual, but also goes much further and includes templates for classroom evaluation and classroom standards. These templates allow for the development of a classroom improvement plan. The book also brings together and discusses many of the principles that should be followed when designing learning spaces. Many of the recommendations for good practice within this book were confirmed by the findings of this study. The following extract gives some useful indicators.

Philosophy of 'Classroom Design' - Concepts to follow when designing teaching and learning spaces include:

- Sound pedagogy must be the guiding principle of planned work
- Keep it simple and flexible wherever possible
- Technology should be easy to use
- Maximise collaboration in planning and design
 - Get staff from all disciplines involved at an early stage of design
 - Get students involved if practical
- “Future proof” where possible - rooms may be upgraded only every 15 to 20 years
- Future works should emphasise the standardisation across campus
- Build in simple facilities to allow ease of maintenance etc.

Factors Affecting Classroom Design -Effective Classroom Design is affected by a number of factors including:

- Existing teaching space is not always in the right place, the right building or the right size.
- Are the
 - Are classrooms intended for 50 students adequately sized to seat 50 students with the appropriate furniture?
- Classroom technology
 - Is the classroom capable of supporting the teaching needs of the academics?
- Flexibility of Classroom space
 - Flexibility is a key factor in the design of rooms to accommodate the teaching and learning needs of the future. The configuration of the room and the furniture should have the ability to change as the pedagogy evolves. Classroom design should reflect this.

There would seem to be a need for an authoritative up to date manual for the UK, such a manual would need to be created and maintained by an active grouping of expert practitioners. Part of the study included a *'Think Tank'* meeting (Aston University July 16th 2005) bringing together a wide range of expert and senior practitioners of learning space design, management and support. Participants identified a number of headings that should be included in such a design manual. These included:

Legal and compliance issues – Examples of possible content included relevant aspects of the Disability Discrimination Act (DDA), building and planning regulations.

Glossary of room types with definitions and standards – This would include definitions of the different types of learning spaces, such as teaching rooms, lecture rooms, computer clusters, seminar rooms and open access spaces.

Room Design and Location Guidelines – This would cover factors such as the location of rooms, sizes, proportions, acoustics, ventilation, corridors and circulation spaces appropriate for different uses.

Fixtures, Fittings and Furnishing - To include recommendations on issues such as choice of surface treatments, colours, furniture types and layouts – covering style, density and configuration of seating. It would also be useful to cover issues such as interactivity and flexibility. This section would highlight the differences between different room types, such as lecture theatres and open-access computer clusters.

Equipment – Covering the need for, and use of, equipment such as overhead projection, slide projection, audio-visual systems – portable and fixed, types and sizes of writing boards and projection screens. Also covered would be the use and provision of computer equipment and infrastructure.

Standards – this section would detail the standards and specifications for use of equipment that should be supported, covering everything from video standards, such as PAL, VHS, NTSC, to file formats, e.g. Windows, Unix, Apple systems.

Control systems – What control systems are in use, what level of control such systems should give and how this might change in different types of rooms.

Technical Infrastructure – What infrastructure needs to be available to support the equipment within rooms. This covers power, lighting, data (wired and wireless) and other facilities such as video feeds and specialist services such as oxygen and mains gas supplies in specialist laboratories.

Physical Environment – This would include security of rooms, equipment and the users; adjustable lighting and emergency lighting; heating and ventilation; signage; waste disposal and other miscellaneous items such as clocks and teaching consumables.

The above list is by no means comprehensive, but even with little detail is already extensive. This shows that there is a very real need for such guidelines to ensure that learning space design projects are completed to a high standard and that all necessary questions have been answered.

Commissioning: Implementation, Ownership, Maintenance

Implementation – New learning spaces will have been designed to support innovative use and almost certainly new pedagogies. As such it is recommended that one or two pilots are operated initially, perhaps with a new cohort of students. This will help staff and students gain experience of operating within the new environment and can provide the platform from which a set of guidelines and recommendations can be drawn-up for new users of the space. If necessary appropriate professional development and user support information should also be made available.

Ownership - At the end of the design and build process the room will be handed over to an operational unit or an academic unit. At this stage it is important to ensure that the room is used effectively. In order to ensure a high standard of use it is important that the end-users feel a strong sense of ownership. If the room is a teaching space then it is the teachers who must primarily feel the ownership, if it is an open access space then it is the students who will be the main users, and again must feel ownership. Furthermore the ownership must be collective and non-exclusive.

Maintenance - An innovative learning space will necessarily have more facilities and higher grade furniture and décor than learning spaces built some time ago. It is important that the new space is

looked after with care and maintained to a high standard, not least to ensure that all the equipment and facilities are kept in reliable working order. Generally new learning spaces are kept well by users if they are well maintained, so the institution needs to address the question of who should be given the responsibility of looking after the space and what is needed to ensure that it is maintained to a high level.

Summary procedural check list for senior managers

1. Identify from the institution's academic and other strategies the following:
 - The specific need for the new space, its primary use and user group.
 - The vision for the space and where it fits with the institutional vision.
2. Appoint a project manager to lead the working group for the project, who, with the support of the senior management of the institution, will:
 - Define the scope of the project and produce an outline plan.
 - Estimate global costs and identify funding sources available.
 - Identify key stakeholders and establish a project working group to progress the design.
 - Review literature of similar work undertaken elsewhere in UK and abroad.
 - Undertake fact finding missions to other institutions that have completed a similar project.
 - Carry-out detailed planning and design.
 - Review and refine the project plan and budget on a regular basis.
 - Identify the need to appoint external consultants as required, such as architects, interior designers, building services contractors.
 - Keep all personnel in the institution who are outside the project working group well informed of the plans and progress.
 - Ensure that sufficient measures are in place for the ongoing management and support of the space.
 - Ensure that measures are in place to incorporate the use of the space into the mainstream business of the institution.
 - Commission the space and hand it over to the user group.
 - Carry out a review of the space and the effectiveness of its utilisation.

However, perhaps the most important point to remember is that there is no single answer, each institution is different and any successful approach must be adapted to the needs of the institution.

“No single magic formula will guarantee successful learning spaces on every campus. It is clear, however, that it will not be enough if we simply place projectors, computers, and DVD players in the classrooms. Nor will it be adequate just to provide scores of publicly available computers. Such tactics, in isolation, may have little impact. Learning space design is a large-scale, long-term project, involving building and maintaining consensus, curricular vision, emerging technology, and layout and furniture options, as well as intracampus organizational collaboration. Learning space design requires a collaborative, integrated approach, with an overarching vision that informs and supports specific projects.” (Malcolm Brown, Dartmouth College, USA)

References and Further Reading

Brown M, (2005) Learning Spaces *Educating the Net Generation* edited by Oblinger G, Oblinger L - <http://www.educause.edu/educatingthenetgen>

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