Who Put that Column into the Middle of the Room?: Designing Functional, Flexible, and Forgiving Spaces for Library Instruction

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Introduction

What is the right space for library instruction? How do we propose a project of that magnitude? What happens if the architect doesn't listen to us? Can we do this on our own, without an architect? Do we want fixed seating? What type of equipment is needed? What should the capacity be? These and other questions need to be addressed in the need to create dedicated instructional spaces within or near a library. With the increasing demand for electronic classrooms and the measurable benefits smart classrooms have in effective information literacy instruction, librarians are being asked to provide improved learning environment for their students. This presentation will illustrate prototypes for shaping learning spaces to respond to changing learning needs. The result will be a set of practical guidelines for managing design and construction projects of this type.

Developing a Proposal

A strong proposal to those who make decisions on capital improvement projects can result in approval for a good idea and, in addition, make the difference between inadequate and adequate funding. After presenting the guiding rationale for the project, the proposal should outline the benefits of designing and constructing the new space: users should be identified, as should the planning group. This group should involve all who need to play a role, such as a sampling of students and faculty, information technologists who will supervise computer equipment and networks, physical plant personnel, who may employ standards for equipment replacement, such as lamps and other consumables. Identification of the client or clients is essential. Whom will the architect or contractor report to? Whose approval is needed for the design to move into construction? Whose approval is needed for

changes or for additional funds?

The Program

Often overlooked is the design or architectural program, which is essential for reaching an understanding of and agreement on the scope and parameters of the project. Beginning with the overarching goals for the project, the program is a list of its functional requirements. Not a recommended solution, it is rather a statement of the problem. Rather than qualifying the problem, it quantifies it by providing numbers of users, square footages, and other specific requirements.

Benefits of an Interior Architect

Although the final cost of the project will be greater—perhaps as much as 15% higher—there are benefits to employing an interior architect. The architect or designer may ask key questions the client may not think of. The architect will also coordinate the construction schedule, based on knowledge of the optimal sequence of construction components, such as electricity, structure, or carpentry. The architect or designer will also supervise construction and identify problems or omissions on the part of the contractor(s). Experienced not only in providing accurate cost estimates, these practitioners are also familiar with sources for equipment and materials and may be able to acquire more durable and attractive furnishings than those available through standard library suppliers. Finally, the design practitioner can develop specifications for equipment and materials, insuring that the proper selections are made from an often endless set of options.

Space Inventory

Although in many cases there will be a specific space available for the project, in some environments, there may be several options from which to choose. All potential spaces for the

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project should be identified, and based on an inventory of those spaces, their features should be listed: square footage; geometry; structural and spatial intrusions, such as columns and doors; natural and artificial lighting; ceiling heights; level of heating, ventilating, and air conditioning (HVAC); condition of surfaces (floors, ceilings, walls). The interior architect will be a resource for identifying the space that best matches the program.

Essential Components of The Smart Classroom

What is the smart, or intelligent, classroom? It is a learning space equipped with electronic equipment giving all students access to technological resources, such as the Internet, course management software, an intranet, databases, and other electronic subscriptions. It allows the instructor to communicate with students not only orally, but also by means of the technology. Its basic components are computer work stations for each student, a proctor station for the instructor, a digital projector, a video cassette recorder and player, a DVD player, a stereo receiver and speakers, a projection screen, storage for supplies, perhaps a multi-media cart for portable systems, printers and printer stands, and that most atavistic of teaching tools, the white board.

Three Spatial Prototypes

The first and most familiar model is fixed seating in rows. If this is your option, be sure to allow adequate space between rows for easy passage by the instructor. The second option, and one recommended by many library instructors, is flexible of clustered seating, which allows students to work in smaller groups and which may facilitate discussion; this formation may be achieved through selecting trapezoidal tables on wheels. The third option is stadium seating; the advantages of this option are better sight lines for students; be sure to insure adequate space between rows here, too, and remember that ADA compliance prohibits stairs. In this option a work station at the entry level of the classroom will be necessary and will bring with it the liability of separating the student who uses it from the remainder of the class. In some smart classroom, rows of students face each other; this is not recommended since some students will always have their backs to the instructor.

White Boards

These are, of course, the descendents of dusty and trusty chalk boards. Their relative cleanliness necessitates dry-erase markers and the occasional use of a cleaner-solvent. Since the instructor may well need the white board and the projection screen at the same time, the white board should not be, as it often is, located behind the projection screen. You may wish to consider interactive white boards, which energize presentations with touch-sensitive displays and note-making with digital ink. There are three types of projection manufactured by SMART Technologies: font, rear, and flat-panel. There are assets and liabilities to these types of screens: although they allow the instructor to leave the lectern and emphasize teaching material in front of the class at the screen, these screens may be relatively small. The alternative, also manufactured by SMART Technologies, is the Sympodium interactive pen display, which connects to the computer directly and, with an attached pen, allows the instructor simply to touch the monitor for applications and note-making. It employs the standard projection screen, which can be larger than that of the SMART Board, but impedes movement by the instructor by fixing activity to the lectern.

Lectern

The location of the lectern should be considered carefully. If it is not to block the projection screen, it will be positioned toward the side of the room, causing considerable movement between lectern and projection screen. Some prefer to locate the lectern at the center of the classroom; this may block sight lines as well, but it does place the instructor at the center. Many lecterns contain touch screens that control all of the equipment; many also feature awkward designs with insufficient space for notes, keyboard drawers that cannot be fixed and that require uncomfortable hand positions. Some instructors prefer a wireless mouse and a portable keyboard.

Classroom Management Software

Also known as classroom control systems, these are essential tools for teaching in smart classrooms. They allow instructors to control the hands-on experience by broadcasting information to individual work stations or to the entire class. As OPAC and database text on projection screens may be difficult to read, these tools bring the presentation to each computer. Some allow for access to the individual student's work station to see who is having difficulty. Perhaps most useful is their fundamental disciplinary capability of preventing "off-task" activity when a presentation occurs. Some available systems are Apple Remote Desktop, AristoClass, InSight and Catapult, KnowledgeWEB System, LanSchool, SoftLink, NetOp School, NetSupport School, Sanako Study, and SmartClass.

Lighting

Whether natural or artificial, the quality of light has a perceptible impact on the experience of space. There are two kinds of light: ambient, which provides general, or mood, lighting, and task lighting, applied to specific activities. Optimally, the light will be adequate for the task without adding glare, and the pattern of lamps will follow the pattern of activities. The interior architect should provide a reflected ceiling plan, which is the inverse of a floor plan; rather than looking down, the viewer looks up. You should match the ceiling plan to the floor plan to determine whether the lighting has been positioned correctly. Don't forget to check the placement of light switches, especially if you are inheriting a space used for other purposes. They should be positioned at each entry, as well as near the lectern. Rheostatic controls for lights are helpful, as are separate controls for ambient and task lighting.

POWER

Unless you are willing to rely on battery-powered computers, which require ongoing maintenance, you will need to install power outlets within reach of each work station. Customized furnishings for work stations often integrate power outlets within their designs, placing them on the table top. Usually, power outlets and data jacks are combined into one unit. Don't forget that printers will need sources of power as well.

HEATING, VENTILATING, AND AIR CONDITIONING

Most spaces designed before the digital era were designed for lower heat loads. Be aware that computer equipment adds measurably to the heat load of the space and that ventilating and air conditioning will need to respond to those loads. The project may well require adding a compressor or duct work, which will add to the scope and expense of the project.

TYPES OF WORK STATIONS

There are arguments in favor or both desktop computers and laptop computers. The advantages of desktop computers include their modularity, so that, if a keyboard wears out or has coffee spilled onto it, only that component need be repaired or replaced. Lower prices also contribute to the argument in their favor. The chief argument against them is the amount of area they consume, in addition to the size and height of obtrusive monitors, which can block visual communication between students and the instructor. Retractable monitors can provide a solution. Those who prefer laptop computers mention their smaller footprints, fewer cords, and opportunities they provide for reconfiguring the space. If a classroom control system is unavailable, the lids of the laptops can be closed to focus attention onto the projection screen. The arguments against them include reliance on batteries that will limit the duration of their use, and the concern that limited battery life may require unanticipated expenditures. Internal mice may be unfamiliar to some users, and laptop computers may require a non-standard desk height so as to position the keyboard at the proper level, which may at the same time lower the monitor to a level that makes them difficult for some to read. Furnishings should therefore be designed or selected with great care in relation to ergonomics. The Occupational Safety & Health Administration of the U. S. Department of Labor has a helpful purchasing guide checklist.

MAINTENANCE

Cooperation from technology services for the maintenance of the computer equipment, in addition to housekeeping for the space, is often omitted from the planning equation. New spaces require additional assignments or personnel. Be sure to enroll managers of those areas in the planning process from the start.

CONCLUSION

Increasingly, library administrators are engaged in space planning and design. This uncharted territory can yield unanticipated results, both satisfying and problematic. They key is to gather as much information as possible in advance, to work with the best practitioners possible, and to allow at least twice as much time as you would ever imagine needing.

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