Why is that column in the middle of the room? Success in creating classrooms for library instruction

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Introduction

As hands-on instruction becomes essential in the information literacy curriculum, librarians and library administrators may find themselves planning or proposing spaces that support their instructional goals and nurture those needs through responsive design decisions. To be effective, libraries are with increasing frequency moving toward locating, designing, equipping and furnishing functional, flexible and comfortable electronic classrooms (Primary Research Group, 2008). Whether or not an architect is available for assistance, considering essential criteria and making responsive design decisions will result in spaces that are functional, flexible and forgiving.

This chapter is based on experiences with spaces at Hofstra University, Felician University and Yeshiva University, all in the metropolitan New York region. It proposes a set of guidelines for ensuring greater success in the realization of the library instruction classroom. The chapter title derives also from experience at those institutions, where the spaces available contained structural columns almost in their centres, serving not only to support the floors of the spaces above, but also, on a metaphorical level, to suggest the occasional impediments and constraints that confront planners and designers of any interior volumes. Creative problem solving requires accommodations to inherent obstacles, and planners and designers who expect the unexpected will be more likely to be able to surmount those obstacles and achieve their goals.
Several questions are likely to emerge in the early stages of the planning process:

- 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?

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 chapter will illustrate prototypes for shaping learning spaces to respond to changing learning needs and will take the shape of 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 make the difference between inadequate and adequate funding. After presenting the guiding rationale for the project, the strong proposal will outline the benefits of designing and constructing the new space, and identify the users, as well as 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, and physical plant personnel, who may employ standards for equipment replacement, such as lamps and other consumables. Identification of the client or clients is essential: to whom will the architect or contractor report? Whose approval is needed for the design to move into construction? Whose approval is needed for changes or for additional funds?

The project team

Although not customary in all institutions when the plan is modest, project teams are fundamental in ensuring implementation of the plan. The project team assembles the decision makers, as well as those on whose success the project depends. Although the planning group may reconstitute itself as the project team, it may bring its work to completion by asking the project team to supersede it. Even if the institution has little precedent for a project team when there is not an architect, designer or external contractor, there are benefits to regular, brief, well-documented meetings by those most involved. At minimum, the team will include the architect or designer (if there is one for the project), at least one representative from the library, including the librarian who works most closely with the instruction programme, a member of the internet technology office, a representative of housekeeping or building maintenance, key personnel involved with audiovisual equipment, and the institutional purchasing agent. Weekly meetings are optimal for tracking progress, and a written record circulated to team members serves as documentation of decisions agreed to, as well as of responsibilities taken by team members and others.

The programme

Often overlooked is the design or architectural programme, 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 programme 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 employing 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; and the architect will coordinate the construction schedule, based on a knowledge of the optimal sequence of construction components, such as electrical, structural or millwork. 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 stylish 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 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. It is wise to identify all potential spaces for the project, and based on an inventory of those spaces, their features can 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); and condition of surfaces (floors, ceilings, walls). The interior architect will be a resource for identifying the space that best matches the programme.

Essential components of the smart classroom

The smart, or intelligent, classroom 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 resources. 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, projection equipment, speakers, a projection screen, storage for supplies, perhaps a multimedia cart for portable systems, printers and printer stands, and that most atavistic of teaching tools, the white board, which the interactive whiteboard may supersede.

The floor plan

Whether or not the project team includes an interior architect, developing a floor plan is indispensable. A scale no smaller than quarter-inch is desirable, and the components of the plan are all fixtures and furnishings. If a professional is unavailable to draft the plan, quarter-inch graph paper may ease the production of the drawing. It is helpful to indicate locations of power, data jacks, light switches and other controls, such as thermostats. New lighting will require a parallel plan, known as a reflected ceiling plan.

Standard projection option

LCD projectors, or data projectors, can enlarge and direct digital media onto a screen. Although it might seem simpler to keep the projector on a media cart, permanent installation is preferable. Suspending the projector by means of a ceiling mount allows for better sight lines, a direct projection angle, and less need for calibration with devices

such as an interactive white board. Be sure to budget for replacement bulbs, which are costly.

Alternate projection option

Some campuses now favour LCD television monitors, which boast minimal maintenance costs, in place of data projectors and screens; however, if the screen size is small, it is suitable for small classrooms only. Often, the aspect ratio needs adjustment, and with some settings, background images are erased. If kept on a media cart, it is essential that there be a separate lectern for the keyboard, so that the instructor does not block the monitor.

Four spatial prototypes

The first and most familiar model is fixed seating in rows illustrated in Figure 26.1. The structural columns necessitated narrower rows, and the glass storefront prevented lateral orientation, which would decrease the distance of rear rows from the projection screen. Laptop computers stored in a charging cabinet are distributed as needed. If this is your option, be sure to allow adequate space between rows for easy passage by the instructor.

Figure 26.1
The column intrusion in Yeshiva University's instruction laboratory in the 2015 renovation of the Pollack Library in the Gottesman Library Building.

The second option, and one recommended by many library instructors, is a flexible arrangement 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 casters (Figure 16.2). Wireless laptop computers allow for table rearrangement to enable small-group assignments.

Figure 26.2
Trapezoidal table on casters

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 compliance with the Americans with Disabilities Act (ADA) does not permit stairs (Figure 16.3). In the classroom shown in Figure 16.3 stadium seating creates excellent sight lines and is ADA-compliant by virtue of the location of the first row at the room's entry level.

If there are stairs, as included in most stadium-seating arrangements, a work station at the entry level of the classroom will be necessary and bring with it the liability of separating the student who uses it from the remainder of the class. In some smart classrooms, rows of students face each other; this is not recommended as some students will always have their backs to the instructor.

Figure 26.3
Stadium seating in Dickinson College's Waidner-Spahr Library (courtesy of James Gerencser, Dickinson College)

The fourth option consists of peninsula tables, each with a flat-panel screen (Figure 16.4). This adaptive solution to a space with multiple columns (in the former book stacks wing of Fairleigh Dickinson University's Messler Library, now Felician University's Education Commons) provides each student proximity to a screens controlled by the instructor and allows the instructor to move easily among small groups of students.
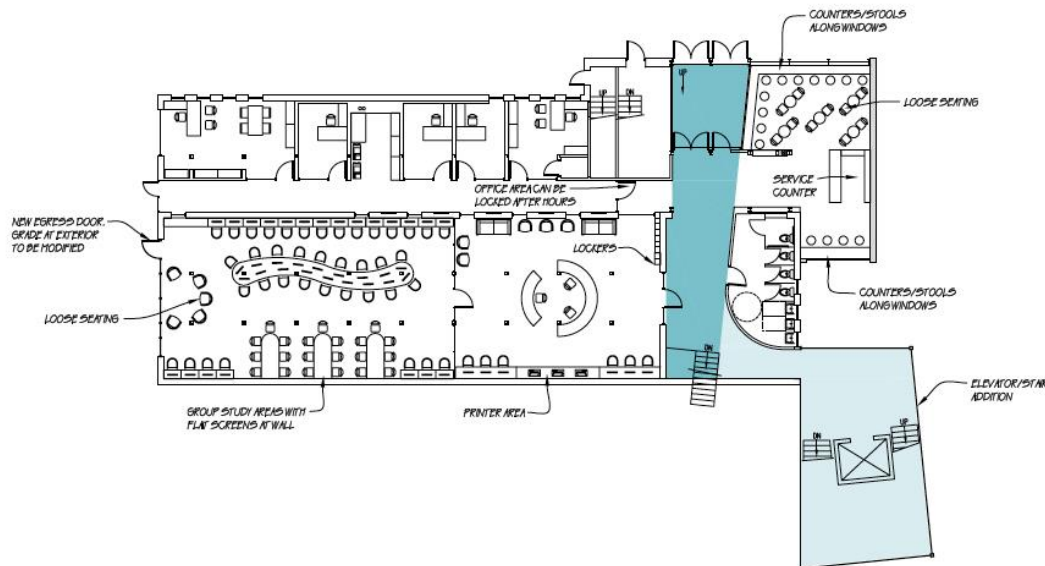

Figure 26.4
Floor plan of computer laboratory in Felician University's Education Commons illustrating the instruction node at the lower left (courtesy of Arcari + Iovino Architects)

White boards

These are, of course, the descendants 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 ought not to be, as it often is, located behind the projection screen. A hybrid solution, in which the image is projected onto the whiteboard, allows for markup but requires good housekeeping if prior instructors' markup is not to obscure the images.

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. Some SMART Boards have integral projectors, which cantilever from the interactive white board, thereby simplifying installation. An 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 that that of the SMART Board, but impedes instructor movement by fixing activity to the lectern. A 2009 survey concluded that some instruction librarians dislike SMART Boards because of inadequate image resolution (Wasielewski).

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 centre of the classroom; this may block sight lines as well, but it focus attention on the instructor. Many lecterns contain touch screens that control all of the equipment; many also feature awkward designs, such as insufficient space for notes and keyboard drawers that require uncomfortable hand positions. Some instructors prefer a wireless mouse and 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.

Lighting

Whether natural or artificial, the quality of light has a perceptible impact on the experience of space. There are two kinds of light, and a blend of the two may increase the quality of the environment: 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 reader looks up. You should match the ceiling plan to the floor plan to determine whether the lighting has been positioned correctly. The placement of light switches is important, especially if the space was previously used for other purposes. Light switches should be positioned at each entry, as well as near the lectern. Rheostatic controls for lights are essential, 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 workstations often integrate power outlets within their designs, placing them on the tabletop. Wi-Fi signals should be sufficiently strong so that data jacks for student computers are optional. Printer(s) will need sources of power as well.

Heating, ventilating and air conditioning

Most spaces designed before the digital era managed lower heat loads. Computer equipment adds measurably to the head load of the space, and 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.

Computer equipment

There are arguments in favour of 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 their popularity. 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. That obtrusiveness is absent in newer monitors that feature screens with adjustable height. Recessed monitors, which rest below the table surface, are not recommended because of the difficult viewing angle that results (Grafstein, 2008). 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 unforeseen expenditure. 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, simultaneously lowering the screen to a level that for some is difficult to read. Furnishings should therefore be designed or selected with great care in relation to ergonomics. The Occupational Safety and Health Administration of the U.S. Department of Labor has a helpful purchasing guide checklist (OSHA, n.d.).

Furnishings

Computer tables may be basic, although grommet holes in tabletops for cables prevents tangling and improve the appearance of the space. If the floor surface is not carpeted, caster chairs may be preferable, so as to reduce sound as students move in them. Although unnecessary, arms for chairs, if selected, are easily abraded when pushed underneath tabletops. Stacking caster chairs are available and will provide flexibility.

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. It is sensible to enroll managers of those areas in the planning process from the start.

Conclusion

Increasingly, library administrators engage 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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