

Summary Report

Survey of Learning Space Design in Higher Education

**Presented at the 44th Annual, International Conference of the
Society for College and University Planning
July 19-22, 2009, Portland, Oregon**

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Introduction

Conceptions of the learning process have varied over time, from seeing learners as “blank slates” for a teacher to fill, to the view that, unless a learner is engaged in actively constructing knowledge, little will be learned or retained.¹ As research on the physiological aspects of learning has revealed, active engagement with the learning object — whether a lecture, laboratory process, text, or creative medium — increases the likelihood that the learner will both retain and be able to use information and skills later.² While the realities of instructional spaces on most campuses fall closer to the sage-on-the-stage paradigm than the guide-by-the-side, more campuses are seeking to create facilities that encourage collaboration and active participation in learning activities.³

The Society for College and University Planning and Herman Miller, Incorporated, have partnered again this year on a survey of learning space design considerations on campuses. This year, additional questions were asked about how, if at all, campuses are measuring the effects of their learning space renovations or new construction. We hope to be able to continue to document the work on campuses to create innovative spaces that encourage more learner and faculty engagement.

Methods

Survey Design

An online survey was again used to gather information from a variety of potential respondents (see Appendix). A link to the survey first appeared in an online article published in the *EDUCAUSE Quarterly Review*.⁴ The request to complete the survey was subsequently sent to all SCUP members and was available for input from April 6 to June 30, 2009. Announcements about the availability of the survey were included in a variety of electronic newsletters, email lists, and personal contacts.

¹ Peter L. Berger and Thomas Luckman, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (Garden City, NY: Doubleday, 1966); Jean Lave and Etienne Wenger, *Situated Learning: Legitimate Peripheral Participation* (New York: Cambridge University Press, 1991) and L. S. Vygotsky, *Mind in Society: The Development of Higher Psychological Processes* (Cambridge, MA: Harvard University Press, 1978).

² Daniel T. Willingham, *Why Don't Students Like School?* (San Francisco, CA: Jossey-Bass, 2009); James Zull, *The Art of Changing the Brain: Enriching the Practice of Teaching by Exploring the Biology of Learning* (Sterling, VA: Stylus Publishing, 2002).

³ Nancy Van Note Chism, “Challenging Traditional Assumptions and Rethinking Learning Spaces,” in *Learning Spaces*, Diana G. Oblinger, Ed. (Boulder, CO: EDUCAUSE, 2006), <http://www.educause.edu/learningspaces>.

⁴ Phyllis T. H. Grummon, “Best Practices in Learning Space Design: Engaging Users” (*EQ*, vol. 32, no. 1, January-March 2009)

The survey questions were largely duplicative of those asked in 2008.⁵ Significant changes included: (1) the elimination of questions about specific spaces on campus (optimal and minimal); (2) the elimination of the question about how important specific learning space characteristics were to a campus; and (3) the addition of a question on whether new or renovated spaces were subject to measurement.

Following demographic questions, the respondents were asked to respond to questions about six characteristics of learning spaces on their campuses. In addition to the questions about their campuses, respondents were also asked to report on their views of learning spaces now and in the future, as well as their thoughts on measuring the effectiveness of learning spaces. The final question again asked respondents what they would say to their president about the learning spaces on their campuses.

Sample Characteristics: Institutions and Organizations

A total of 111 people responded to the majority of the survey questions. The specific number of respondents for each question is noted as results are reported. Over 90 percent of the respondents were from educational organizations. As with last year’s survey, nearly three-quarters (72 percent) of the respondents were from 4-year-and-above institutions, the majority of which were public (see Charts A and B). While the majority, 82 percent, had a traditionally aged undergraduate population, 18 people responded that their institution had an older average age (24-30 years of age) or had a bimodal population (traditional and older students fairly equally represented) (See Chart C).

Chart A: Degree Granting Status

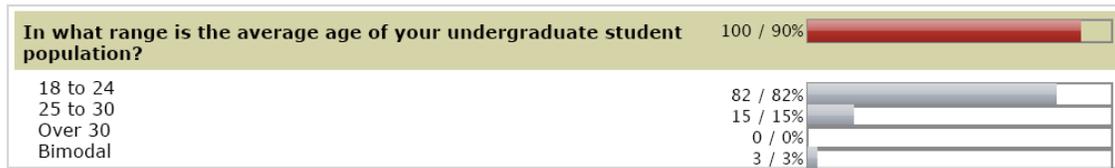


Chart B: Governance



⁵ Phyllis T. H. Grummon, “Summary Report: Survey of Learning Space Design in Higher Education” (Presented at the 43rd Annual, International Conference of the Society for College and University Planning, July 23, 2008, Montréal, Quebec, Canada)

Chart C: Average Age of Undergraduate Students



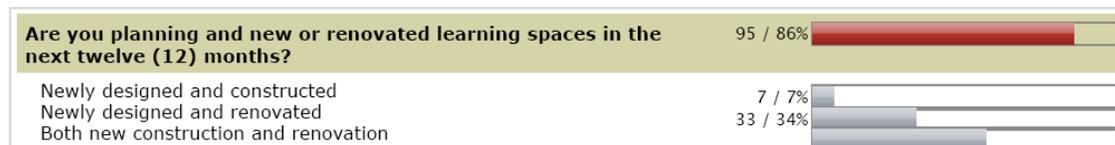
The institutional type best represented in this sample—4-year-and-above, public, traditionally aged undergraduate—is only 29 percent of the overall number of higher education institutions in the US.⁶ This means that we suggest caution in generalizing from the results of this survey to the larger set of all campuses. The similarity of the 2009 respondents’ institutional type to the 2008 survey allows us to speculate, at least, about trends in answers to the questions.

Non-educational respondents comprised approximately 10 percent of the sample. Of those, 50 percent were architectural/engineering/construction management firms, 40 percent were involved in campus planning and consultation, and 10 percent were in information technology.

In this year’s survey, institutions were asked to report on whether or not they were planning any new or renovated learning spaces in the next twelve months. Virtually all of the respondents are (95 of 111). Chart D provides the details of what the respondents’ campuses were planning. In addition, these respondents were asked if they were required to measure the results of the new or renovated learning space. The percent of respondents who are required to measure results was 21 percent, with 66 percent having no such requirements and 13 percent uncertain about whether results’ measurement would be used. Respondents were also asked to describe the measures that were being used to assess the space, with 29 people providing comments. An analysis of the comments reveals that

- ✚ Nine campuses are using primarily utilization statistics as a measurement;
- ✚ Nine are using naturally occurring measures and surveys or other social science methods to assess faculty and student changes (e.g., retention, grade distribution, observations, etc.) and;
- ✚ Six are using physical measurements (e.g., energy use, noise reduction, etc.).

Chart D: Planned Learning Space Construction or Renovation



⁶ Count of IPEDS institutions based on 2006 Institutional Characteristics, http://nces.ed.gov/programs/digest/d06/tables/dt06_003.asp?referrer=report

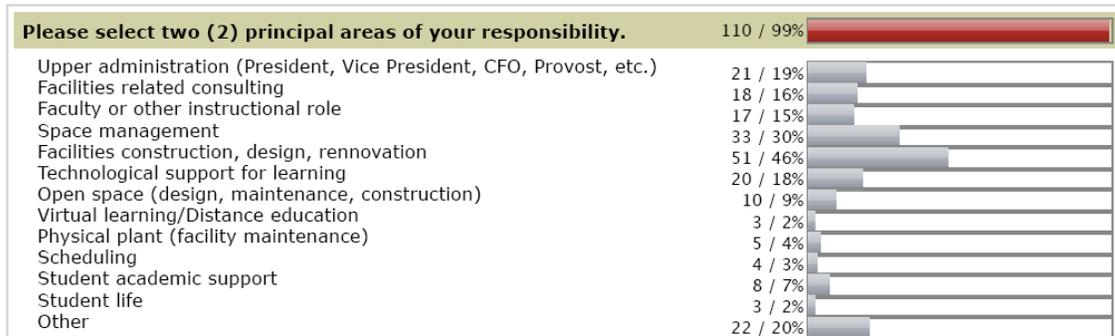
Sample Characteristics: Individual Respondents

Respondents were asked both their title and principal areas of responsibility. A sampling of the titles provided is indicative of the range of functions on a campus that are involved in developing learning spaces.

- ✚ Associate Dean, Instructional Technology
- ✚ Vice President, Institutional Advancement
- ✚ Reference Librarian
- ✚ Architect
- ✚ Associate Vice President, Facilities Planning and Capital Projects
- ✚ Professor of Biology
- ✚ Manager, Space Information Systems and Analysis
- ✚ Vice Provost and Chief Information Officer
- ✚ Head of Strategic Planning
- ✚ Director, Institutional Research
- ✚ Director of Campus Planning and Sustainability

Chart E provides a picture of how the respondents saw their two principal areas of responsibility. Not surprisingly, the majority of respondents reported having responsibilities associated with facilities design, space management, or design and construction.

Chart E: Principal Areas of Responsibility



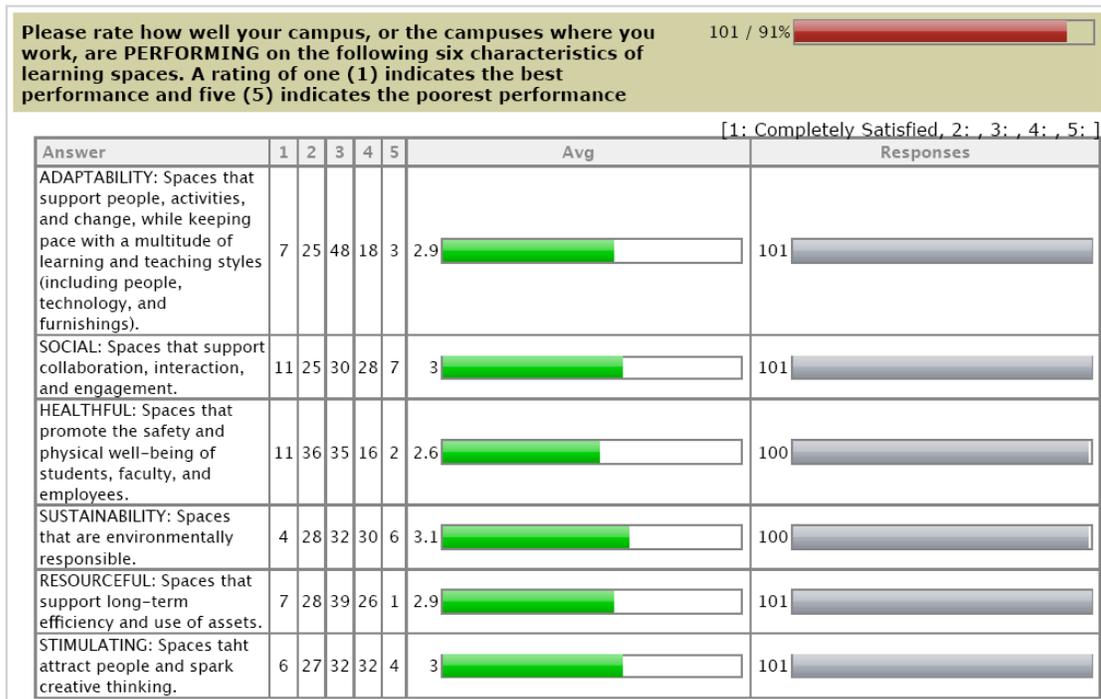
Respondents had spent from less than a year to 40 years working in higher education with the average number of years approximately 18. In contrast with their time in higher education, respondents averaged somewhat fewer years in planning, approximately 14 years, with a range of less than a year to 38 years.

Results

Learning Space Design Characteristics on Campuses

Survey participants were asked to indicate how well their campus was performing on six learning space characteristics, with lower numbers representing higher performance on the characteristic. As Chart F shows, this year’s participants rated their campuses as performing best on the healthfulness of learning spaces. The 2008 respondents rated their campuses as performing the best on the adaptability of spaces.

Chart F: Learning Space Performance



The range of performance ratings, 2.6 to 3.1, was smaller this year than last, 2.8 to 3.5. As with last year’s respondents, this year’s saw their campuses performing most poorly in the area of sustainability in learning spaces.

Decision-making on Learning Space Design

Two questions were asked on what functions on campus drive design decisions—what does now and what should drive those decisions. Respondents were asked to rank order functions/key players by the significance of their role in determining the design of learning spaces. Chart G displays the results of ranking on the functions that **are** the key players on the respondents’ campuses driving decisions about learning space design. Chart H contains the same information for which functions the respondents think **should** be the driver of design.

Chart G: Functions that Are Driving Learning Space Design

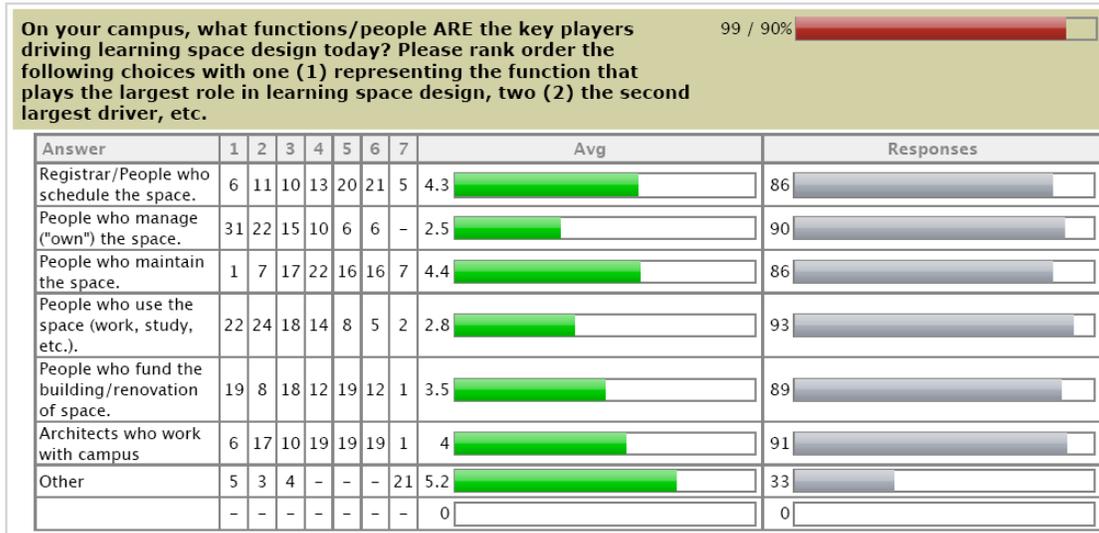
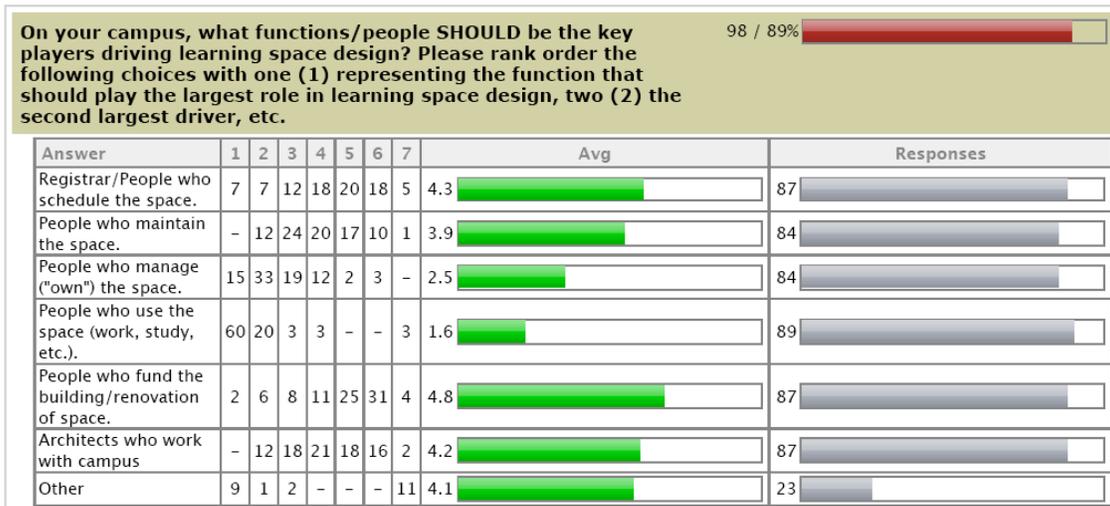


Chart H: Functions that Should be Driving Learning Space Design



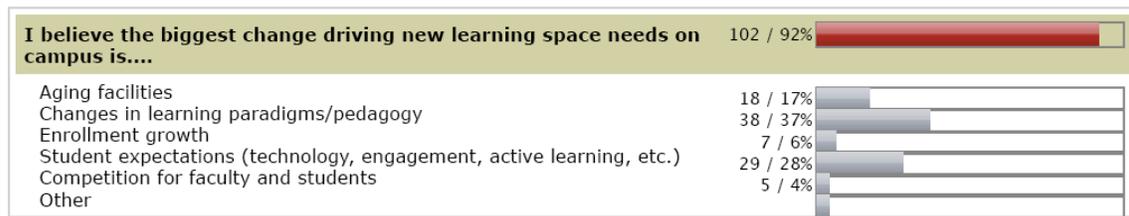
The function most likely to be the present-day key player in design is whoever manages or ‘owns’ the space, the same result as last year’s survey. Those who use the space play the second largest role. Again, this is the same ranking as last year. When asked who *should* drive learning space design, the majority of respondents (60 of 111) ranked the people who use the space first, with those who manage the space second. This reversal of who does and who should direct learning space design was the same in the 2008 survey. These results appear to confirm that campuses understand that those who use them are the best designers of learning spaces.

Under the “other” category for both questions, a number of respondents listed “facility planners” or “university architects”. Thus, people who are responsible for construction and space management on campuses are also seen as a legitimate and necessary influence on the design process. As with last year’s results, the responses to “other” demonstrate the diversity of functions on campuses that become involved in learning space design. Again, information technology is mentioned, along with such constituencies as the employers who hire graduates from a campus and boards of trustees and accrediting agencies.

Views on Learning Space Design

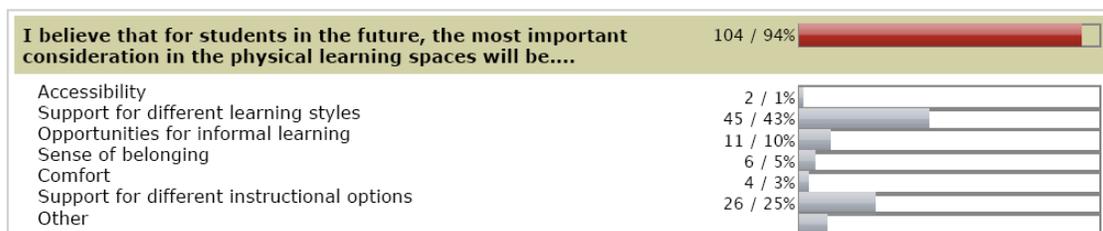
Participants were asked a series of questions on their broader views of learning space design. Charts I, J, and K present the range of answers to these questions.

Chart I: Changes Driving Learning Space Needs



Changes driving learning space are focused largely on student expectations and the understanding that research into learning has led to revised views on how to best enable student learning. It’s also clear, however, that aging facilities may act as a driver on campuses for the renovation or construction of learning spaces that meet these needs. Responses under the “other” category primarily reflected a desire to merge the answers, rather than select just one (e.g., “student expectations and changes in learning paradigms and pedagogy”).

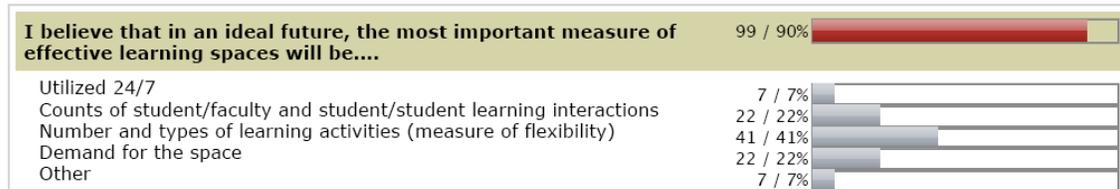
Chart J: Students’ Needs in Learning Spaces



As with last year’s survey, respondents believe that support for different learning styles should be the most important consideration for how physical learning spaces are designed. Secondarily, but still strongly, spaces must support faculty in a range of instructional options—the parallel to meeting varying learning styles. The responses in

the “other” category reflect on the need for flexible or adaptable space that can serve multiple purposes and encourage collaborative learning.

Chart K: Measures of Effective Learning Spaces



The measures presented in this question focus primarily on the process of using learning spaces and not their outcomes, a point made in the comments under “other”. Thus we find respondents also wanting to measure whether newer style learning space increases academic performance for all students and their retention in school. The responses to the question indicate that having measures of how flexible and adaptable a space is are perceived as most important by the survey participants. Assessing faculty/student and student/student engagement—a potential measure of collaborative learning—is also seen as a viable way of determining how effective a learning space is.

Open-ended Question

One open-ended question was asked at the end of the survey, “If you had five minutes with the president of your institution, or an institution with which you work, to talk about learning spaces on campus, what would you make sure you said”? The responses to this question, 72, reflected a number of recurring themes, with there often being more than one theme expressed in a response.

The most frequent theme addressed was the need for flexibility and adaptability in any learning space. The space’s ability to accommodate multiple learning and pedagogical styles was commonly included in answers. Observations included the need to provide sufficient space for collaboration, a technology-rich environment, 24/7 access so it can be used for formal and informal learning, comfortable furniture—an inviting and engaging space. Specific design suggestions also fall under this theme; such as, 30 square feet per student workspace, engage the students and faculty in the design (users)—always collaborate, and think 25 years ahead when creating learning spaces.

As important as flexibility and adaptability was the desire to make such learning spaces available to all students, because all spaces on a campus should be optimized for learning. Often joined with this theme was the need for central scheduling so that the existing ‘ideal classrooms’ could be provided to students outside particular departments. One response, however, thought that departments should control scheduling of spaces. We might guess which systems prevail now on the respondents’ campuses. There were also comments about the need to spend money on accessibility mandates and the sense that precluded or reduced funding for broader creation of flexible classrooms.

For many respondents, the ability to ‘talk to the president’ meant focusing on acquiring funding for needed work on their campuses. Nearly a quarter of the answers to this question involved the need to providing money for renovation, maintenance, and new construction. A number of answers the need to upgrade older spaces, 1970s and before, as an immediate need. Included with this was the necessity of ensuring that spaces were healthy and safe and that HVAC (heating/ventilation/air conditioning) systems were functional and contributing to reducing energy use. The investment in learning spaces was frequently tie-barred with their ability to attract and retain students and faculty and to the accomplishment of the institution’s mission to serve students’ learning needs.

A number of responses singled out the library as the place on the campus that was most in need to replacement or renovation. These answers reflected the need to have flexible learning spaces, coffee and food, rich technology, and collaborative work areas in order to bring the library up to date and make it truly useful to students. Libraries are symbolic of the importance a campus puts on their dedication to learning and the lack of adequate facilities was seen as highly detrimental to these campuses.

Finally, participants in the survey noted the need for training or other assistance for faculty. Without such support, these respondents foresaw inadequate use made of optimal learning spaces. It is interesting to note, that no respondents said that students needed any assistance in learning how to engage in these spaces—simply that students wanted them.

Discussion

The respondents in this year’s Learning Space Design Survey provided valuable information on how campuses are conceiving new learning spaces, particularly since 86 percent reported plans for renovating or building new learning spaces. Once again, the need for adaptable, flexible spaces that support differences in learning styles and pedagogy are recognized as most desirable. Respondents were clear about wanting to see such optimal learning spaces available to all students in both formal and informal settings. As with last year, funding and administrative support are keys to achieving what survey participants want to see created.

Respondents reported that their campuses were performing best on the characteristic of ‘healthful’ in their learning spaces. Last year’s survey participants rated ‘adaptability’ has the highest performing characteristic. It’s possible that concern for the ‘safety and physical well-being of students, faculty, and employees’ has become a more powerful force on campuses as they have seen increasing levels of violence. While participants in 2009 rated healthful highly for performance, their overall responses indicated a continued understanding that adaptability and flexibility are essential characteristics of optimal learning spaces.

This year’s survey included questions on how campuses are measuring the effectiveness of their learning spaces. Not surprisingly, the utilization rates for a space were considered a key indicator that it was a desired space. Additional measures for such spaces included surveys and focus groups with users, retention rates and grade point averages, and post

occupancy evaluations and studies. Finally, campuses use such physical measurements as energy usage, air quality, and noise levels. Only 21 percent of the respondents' campuses were required to measure the results of building new or renovated learning spaces. We will be interested to see how research on these learning spaces develops, particularly to measures beyond utilization.

Respondents in both 2008 and 2009 recognized the importance of the people who will use a space play an active role in designing it. Unfortunately, on their campuses, both sets of survey participants indicated that those who 'own' or manage the space are the primary decision-makers on learning space design. We hope that one day these results will indicate that users are the drivers of design.

The future of learning space design clearly lies in continuing to push for flexibility and responsiveness to changing needs. Respondents recognize that the students and faculty arriving at their campuses now are a push for increasing these characteristics in essentially all campus spaces. They perceive that future students, faculty, and employees will only demand as much or more access to technology-rich and engaging spaces. Many people on a campus are interested in the future of learning space design. As we noted last year, this breadth of participation makes learning space design an excellent candidate for integrated planning. The core missions of teaching and learning demand that everyone is involved in supporting changes in this area.

We would like to once again thank those people who responded to this survey. We appreciate their willingness to share their thoughts and concerns regarding how learning spaces are designed on campuses. We hope the results of this survey are useful to anyone engaging in learning space design.

Appendix

2009 Learning Space Design Survey Questions

Demographics

1. What is the title of your present position?
2. How many years have you worked in higher education?
3. How many years have you worked in planning?
4. Please select two (2) principal areas of your responsibility
 - a. Upper administration (President, Vice President, CFO, Provost, etc.)
 - b. Facilities related consulting
 - c. Faculty or other instructional role
 - d. Space management
 - e. Facilities construction, design, renovation
 - f. Technological support for learning
 - g. Open space (design, maintenance, construction)
 - h. Virtual learning/Distance education
 - i. Physical plant (facility maintenance)
 - j. Scheduling
 - k. Student academic support
 - l. Student life
 - m. Other
5. What is your organizational focus?
 - a. Educational Organization
 - b. Non-education Focus/Corporation

Educational Organizations

6. Degree Granting Status
 - a. System Office
 - b. 4-year-and-above
 - c. 4-year
 - d. 2-year
 - e. Other
7. Governance Please check as many as apply.
 - a. Public
 - b. Private
 - c. Non-profit
 - d. For-profit
8. Please select the range below that approximates your institution's most recent Fall, Full Time Equivalent, Undergraduate Student Headcount.
 - a. Less than 1,499
 - b. 1,500 to 2,499
 - c. 2,500 to 4,999
 - d. 5,000 to 9,999
 - e. 10,000 to 14,999
 - f. 15,000 to 24,999
 - g. 25,000 to 50,000
 - h. Over 50,000

9. In what range is the average age of your undergraduate student population?
- a. 18-24
 - b. 25-30
 - c. Over 30
 - d. Bimodal

Non-educational Organizations

10. Please indicate the primary business of your organization.
- a. Architectural/Engineering/Construction Management
 - b. Campus Planning and Consultation
 - c. Governmental Agency
 - d. Information Technology
 - e. Other consulting
 - f. Systems Control and Service Management
 - g. Other

Learning Space Design

11. Please rate how well your campus, or the campuses where you work, are PERFORMING on the following six characteristics of learning spaces. A rating of one (1) indicates the best performance and five (5) the poorest performance.
- a. ADAPTABILITY: Spaces that support people, activities, and change, while keeping pace with a multitude of learning and teaching styles (including people, technology, and furnishings).
 - b. SOCIAL: Spaces that support collaboration, interaction, and engagement.
 - c. HEALTHFUL: Spaces that promote the safety and physical well being of students, faculty, and employees.
 - d. SUSTAINABILITY: Spaces that are environmentally responsible.
 - e. RESOURCEFUL: Spaces that support long-term efficiency and use of assets.
 - f. STIMULATING: Spaces that attract people and spark creative thinking.
12. Are you planning any new or renovated learning spaces in the next twelve (12) months?
- a. Newly designed and constructed
 - b. Newly designed and renovated
 - c. Both new constructions and renovation
13. Are you required to measure the results of new or renovated learning spaces?
- a. Yes
 - b. No
 - c. Don't know

14. On your campus, what functions/people ARE the key players driving learning space design today? Please rank order the following choices with one (1) representing the function that plays the largest role in learning space design, two (2) the second largest driver, etc.
- Registrar/People who schedule the space
 - People who manage (“own”) the space
 - People who maintain the space
 - People who use the space (work, study, etc.)
 - People who fund the building/renovation of the space.
 - Architects who work with campus
 - Other
15. On your campus, what functions/people SHOULD be the key players driving learning space design? Please rank order the following choices with one (1) representing the function that plays the largest role in learning space design, two (2) the second largest driver, etc.
- Registrar/People who schedule the space
 - People who manage (“own”) the space
 - People who maintain the space
 - People who use the space (work, study, etc.)
 - People who fund the building/renovation of the space.
 - Architects who work with campus
 - Other
16. I believe the biggest change driving new learning space needs on campus is....
- Aging facilities
 - Changes in learning paradigms/pedagogy
 - Enrollment growth
 - Student expectations (technology, engagement, active learning, etc.)
 - Competition for faculty and students
 - Other
17. I believe that for students in the future, the most important consideration in physical learning spaces will be...
- Accessibility
 - Support for different learning styles
 - Opportunities for informal learning
 - Sense of belonging
 - Comfort
 - Support for different instructional options
 - Other
18. I believe that in an ideal future, the most important measure of effective learning spaces will be ...
- Utilized 24/7
 - Counts of student/faculty and student/student learning interactions
 - Number and types of learning activities (measure of flexibility)
 - Demand for the space
 - Other

19. If you had five minutes with the president of your institution, or an institution with which you work, to talk about learning spaces on campus, what would you make sure you said?