LEARNING SPACE RATING SYSTEM

Version 1, September 2014

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INTRODUCTION

Higher education is under increasing scrutiny, as costs continue to increase and more students consider alternatives to traditional residential education. In addition, new course models (such as blended and flipped) provide opportunities to rethink the design of learning spaces. Given this environment, it is important to focus attention on the value of campuses and in particular those physical spaces where learning occurs and to engage key campus stakeholders, instructors, and students in their planning and design.

The Learning Space Rating System (LSRS) provides a framework to measure the potential performance of a learning space, that is, to assess what the space enables students and faculty to do in it. It serves as a way to measure progress towards consistency across learning spaces and towards designs that achieve academic goals. It also provides the higher education community with a common language and method to document best practices.

This current version of the LSRS measures formal learning spaces, those designed to accommodate face-to-face meetings of all course participants (future versions will include informal spaces). It provides a set of credits that assess not only the design of individual rooms, but also the planning, support, evaluation, and strategic alignment that are crucial to the success of the learning that goes on in the room. Recognizing that there is great diversity in teaching and learning styles, the LSRS does not seek to prescribe specific teaching and learning practices, but rather to evaluate a room’s ability to support a broad range of those practices.

We seek to frame the learning space as a collaborative and communal undertaking between faculty, students, administration, technologists, facilities personnel, and planners. Only by working across the institution can we sustain a campus environment that treats learning space holistically and provides an ecosystem to sustain and promote productive faculty and student interactions. Since approaching learning spaces at the institutional level requires coordination across multiple groups, sections 1, 2 and 3 of this learning space assessment tool measure institutional readiness or development of a planning and operations process. Sections 4, 5, and 6 address specific features of physical spaces.

As anyone who has worked in classroom design well knows, it is difficult to devise a vocabulary describing types of formal learning spaces in a way that is simple, comprehensive, and meaningful to everyone. For the purposes of the LSRS, we have used four categories to classify formal learning spaces. We have done this solely for pragmatic reasons, and do not pretend to suggest that these four categories are the “ultimate” way to classify formal learning spaces.
The four categories of formal learning space we use in LSRS version 1 are:

- **discussion-focused** classrooms designed to support meetings of the full course cohort (example: seminar rooms used for upper division and graduate courses)
- **team-based** classrooms with fixed furnishing (example: the step-up design)
- **presentation-focused** classrooms (examples: lecture halls, auditoria)
- **versatile** classrooms that support some combination of the above designs, or are slightly more specialized in the type of learning they support (example: a room with entirely mobile furnishings that can be set in a traditional or team-based fashion)
LEARNING SPACE RATING SYSTEM
Version 1, September 2014
Outline

Section 1: Integration with Campus Context (ICC) ......................................................... page 9
1. *Alignment with Campus Academic Strategy*: Align learning spaces learning spaces with strategic academic plans or initiatives, including institutional accreditation and accountability activities.
2. *Integration with Learning Space Master Plan*: Ensure that the learning space design aligns with a campus learning space master plan.
3. *Compatibility with Campus IT Infrastructure and Plans*: Ensure that the planning, development, and operation of learning spaces is supported by the institution’s technology infrastructure.
4. *Commitment to Evidence-based Research and Assessment*: Develop a regular, iterative process of research and assessment to inform development of learning space and to contribute to an institutional culture of evidence based design.
5. *Innovation in Integrating Learning Spaces with Campus Context*: Provide creative, innovative leadership in integrating learning spaces with the campus academic, strategic, or information technology context.

Section 2: Planning and Design Process (PDP) ............................................................... page 15
1. *Stakeholder Engagement*: Involve users of the learning spaces and strategic partners in the planning process.
2. *Best Practices in Planning and Design*: Base planning or design for a specific project on research and/or documented best practices in learning space strategy and design.
3. *Pilots and Prototypes*: Use the design, installation and testing of a working pilot of a learning space, its tools or other aspects of the design to apply lessons learned, mitigate risk, and increase consensus on the design.
4. *Learning Space as a Teaching Tool*: Utilize the planning, use, and assessment of a learning space to explicitly demonstrate how space design can enable more effective teaching and learning.
5. *Evaluation Plan*: Understand whether the potential of the space has been realized in practice.
6. *Dissemination of Findings*: Share findings and lessons learned from the research, planning, piloting, or evaluation of learning space(s).
7. *Innovation in Design and Planning*: Create exemplary spaces or planning strategies that provide novel or unique features and benefits that advance the practice of learning space design.
Section 3: Support and Operations (SO) ........................................................................ page 23

1. **Support**: Provide ongoing, timely, physical and/or virtual support for learning spaces.
2. **Space Orientation and Training**: Ensure that orientation and training on the specifics of a learning space are available to the students, faculty, and staff using them.
3. **Training of Support Team**: Ensure that the learning space support team can troubleshoot, solve, and address commonly encountered problems in the learning space reactively and proactively.
4. **Faculty Development**: Enable continuous learning and development of faculty in the use of new technology, tools, and capabilities of learning spaces.
5. **Sustainability of Operations**: Manage resources so that learning spaces can perform as intended and be maintained, supported, and improved over time.
6. **Diverse Patterns of Use**: Operate and support learning spaces to enable the highest possible utilization and to provide users more choices in where and when to learn.
7. **Scheduling Systems**: Provide users with a room scheduling system that enables them to match their teaching and learning needs with learning space availability and capabilities.
8. **Innovation in Support and Operations**: Create innovative ways to support and operate learning spaces.

Section 4: Environmental Quality (EQ) ................................................................. page 32

1. **Daylight**: Support learning and improve concentration and engagement by providing daylight into learning space.
2. **Views to Exterior**: Support learning and engagement by providing windows with views to the exterior.
3. **Interior Visibility**: Provide adequate visibility within a space from participants to presenters, to course content, to demonstrations, and to other participants.
4. **Lighting Control**: Ensure optimal flexibility of lighting appropriate to different learning activities.
5. **Thermal Comfort**: Ensure that thermal conditions of spaces are conducive to learning.
6. **Acoustic Quality**: Enable occupants to hear presenters, audio content, and one another through effective acoustic design of the room.
7. **Environmental Stimulation**: Create an aesthetically pleasing and stimulating atmosphere that helps promote student engagement in learning activities.
8. **Innovation in Environmental Quality**: Create innovative ways to enhance the environmental qualities of learning spaces.
Section 5: Layout and Furnishings (LF) ................................................................. page 41
1. Proximities within Space: Configure the room proportions of a space to optimize equal access among people, displays, and writable surfaces in order to facilitate its primary learning activities.
2. Movement through Space: Enable the easy movement of instructors and learners within the space to support communication and to facilitate interaction.
3. Seating Density: Ensure that the density of seating and the space allocated per seat (including circulation and presenter/stage areas) to support the desirable range of potential learning activities.
4. Furnishings Layout: Ensure that the layout of furnishings supports a wide range of potential learning activities.
5. Furniture Configuration Movability: Provide furniture that is easily movable.
6. Work Surface: Provide furniture that provides adequate work surface to accommodate several devices and paper resources that learners may bring.
7. Furniture Comfort and Durability: Provide furniture that is comfortable for extended periods of time (more than an hour) and durable.
8. Movable Partitions: Equip a space with capability of partitioning areas off for different learning activities and group sizes.
9. Transparency: Provide visual connections between adjacent but physically separate spaces so as to enable exposure and visibility into learning activities.
10. Access to Adjacent Informal Learning Areas: Allow learning activities to extend into adjacent or ancillary areas, encouraging interaction and extension of the learning experience.
11. Writable Surfaces: Provide writable surfaces to facilitate interaction for individuals and groups.
12. Physical Storage: Provide storage space adjacent to learning spaces for equipment or furnishings.
13. Future Proofing: Ensure that learning spaces can inexpensively evolve over time.

Section 6: Tools and Technology (TT) ..................................................................................... page 57
1. Electrical power: Ensure that all participants in a space have access to electrical power to support the wide variety of technologies used in learning activities.
2. Network Connectivity: Enable adequate network performance and access for all participants and intended learning activities.
3. Visual Displays: Enable robust sharing of visual data by making it easily available, visible, and/or readable by all participants.
4. Sound Amplification: Enable high quality audio reinforcement in support of learning and teaching activities.
5. Audio/Visual Interface and Control: Enable faculty and students to seamlessly manage audio/visual content across multiple output systems including installed displays, computers, and mobile devices.
6. Distributed Interactivity: Enable full, synchronous participation in learning
activities from groups in multiple, disparate locations.

7. *Session Capture and Access:* Record presentations, group interactions, or conversations with local and remote participants, and make these artifacts accessible asynchronously.

8. *Innovation in Technology and Tools:* Enable new ways to interact among people and content with creative technological solutions or innovative tools.
LSRS Section 1: Integration with Campus Context (ICC)

Credits included in this section:

1. Alignment with Campus Academic Strategy
2. Integration with Learning Space Master Plan
3. Compatibility with Technology Strategic Plan
4. Commitment to Evidence-based Research and Assessment
5. Innovation in Integrating Learning Spaces with Campus Context

Total credits available in this section: 5

Weighted percentage of total points available: 10
LSRS ICC Credit 1: Alignment with Campus Academic Strategy

**Intent**
To align learning spaces with strategic academic plans or initiatives, including institutional accreditation and accountability activities.

1 Point

**Criterion for credit**
Provide evidence of close alignment of the learning space’s design with campus strategic academic plans, major campus academic initiatives, and/or institutional accreditation processes.

**Potential strategies and approaches**
- Map aspects of the learning space directly to campus academic goals. For example, a team-based space design could be aligned to the goal of increasing student engagement and collaboration skills.
- Weave the learning space design directly into a major campus initiative. An example might be including mobile projection in the space’s design to align to a campus tablet initiative.
LSRS ICC Credit 2: Integration with Learning Space Master Plan

**Intent**
To ensure that the learning space design aligns with a campus learning space master plan.

1 Point

**Criterion for credit**
Provide evidence of close alignment with an existing campus learning space master plan.
LSRS ICC Credit 3: Compatibility with Campus IT Infrastructure and Plans

Intent
To ensure that the planning, development, and operation of learning spaces is supported by the institution’s technology infrastructure.

1 Point

Criterion for credit
Provide evidence of close alignment with an institutional information technology strategic plan infrastructure.

Potential strategies and approaches (can do one or more)
- Involve academic technology and information technology professionals as part of planning teams (as described in Section 2, Design and Planning Process).
- Ensure that technology budgets provide for space upgrades, maintenance, and refresh cycles for equipment and furnishings.
- Include consideration of the institution’s approach to online learning and course delivery.
LSRS ICC Credit 4: Commitment to Evidence-Based Research and Assessment

**Intent**
To develop a regular, iterative process of research and assessment to inform development of learning space and to contribute to an institutional culture of evidence based design.

1 Point

**Criterion for credit**
Create and maintain a campus space assessment and evaluation plan that is recognized by multiple campus stakeholder groups.

**Potential strategies and approaches**
- Conduct a post-occupancy space performance evaluation, using the Learning Space Rating System or another instrument.
- Provide regular, on-going forums for user feedback on a specific learning space to improve support and operations.
ICC Credit 5: Innovation in Integrating Learning Spaces with Campus Context

Intent
To provide creative, innovative leadership in integrating learning spaces with the campus academic, strategic, or information technology context.

1 Point

Criterion for credit
Provide evidence of an initiative or project demonstrating innovation and leadership in integrating learning spaces with the campus context in a way that falls outside of ICC Credits 1-4.

Potential strategies and approaches
- Engage multiple new and/or diverse stakeholders across campus in learning space projects with broad impact.
- Organize a campus symposium on learning spaces in an effort to change campus culture.
- Integrate faculty with appropriate expertise into campus learning space strategic planning, research, and assessment.
- Provide national leadership by presenting at or organizing a conference.
LSRS Section 2: Planning and Design Process (PDP)

Credits included in this section:

1. Stakeholder Engagement
2. Best Practices in Planning and Design
3. Pilots and Prototypes
4. Learning Space as a Teaching Tool
5. Evaluation Plan
6. Dissemination of Findings
7. Innovation in Planning and Design

Total available credits in this section: 7

Weighted percentage of total points available: 15
LSRS PDP Credit 1: Stakeholder Engagement

Intent
To involve users of the learning spaces and strategic partners in the planning process.

1 Point

Criterion for credit
Document substantive engagement of the users, operators, and senior administrators to provide input on needs, feedback on proposed solutions, and evaluation of what has been done.

Potential strategies and approaches
- Stakeholders could include representatives of faculty, learners, curriculum development staff (such as a teaching & learning center), academic technology/IT staff, facilities planning, and administration.
- Stakeholder engagement could be demonstrated for credit on a project basis where appropriate, rather than having to document it for each room surveyed.
- Develop a communications plan to inform stakeholders of relevant information and to allow them to provide ongoing input.
- Engage stakeholders through workshops, interviews, surveys, observational studies, photo diaries, town hall meetings, or other means.
- Provide summaries of meeting notes, user surveys, reports, or other written evidence of engagement.
- Solicit feedback during development of the planning and/or design process to provide feedback on concepts, progress plans, and/or pilot projects.
- Gather input after space occupancy to ensure programmatic and user needs continue to be met.
- Engage stakeholders to give feedback on how well existing learning spaces are performing.
LSRS PDP Credit 2: Best Practices in Planning and Design

Intent
To base planning or design for a specific project on research and/or documented best practices in learning space strategy and design.

1 Point

Criteria for credit
To obtain credit, do one of the following:

1. Provide documentation of consultation with published best-practices, benchmarking tours, or consultation with a recognized learning space planner/design expert

or

2. Provide documentation that associates specific design strategies employed with corresponding best practices

Potential strategies and approaches
- Investigate literature on best practices in learning space design.
- Benchmark successful spaces or inspirational examples (e.g. via tours, reports, etc.).
- Engage on-campus or external learning space planning/design experts.
- Allocate project funds to support these activities.
- For ideas on process, one source is: Learning Space Toolkit, http://learningspacetoolkit.org
LSRS PDP Credit 3: Pilots and Prototypes

Intent
To use the design, installation and testing of a working pilot of a learning space, its tools or other aspects of the design to apply lessons learned, mitigate risk, and increase consensus on the design.

1 Point

Criterion for credit
Provide evidence of simulating and assessing proposed design elements through pilot project(s). This credit can apply to pilots and prototypes specifically developed for a particular project or to ones developed as demonstration spaces for campus wide initiatives.

Potential strategies and approaches
- Physical mock-up: Create physical approximations of design features (e.g., full-scale mock-ups with temporary materials to look like proposed space).
- Functional prototype: Modify an existing space to test functionality of the proposed design, new tools, or systems.
- Functional replica: Build working prototype of proposed learning space with proposed materials, technology, and dimensions to evaluate through actual use (e.g., prior to building additional spaces).
- Component test: Acquire key components in reduced quantities (e.g., chairs, furniture, etc.).
- Evaluate any of the above pilots through observational studies, surveys, use diaries, data capture, interviews, questionnaires, etc.
LSRS PDP Credit 4: Learning Space as a Teaching Tool

Intent
To utilize the planning, use, and assessment of a learning space to explicitly demonstrate how space design can enable more effective teaching and learning.

1 Point

Criteria for credit
To obtain credit, do one of the following:

1. Provide documentation of course(s) or curricula developed in conjunction with the planning and/or evaluation of the learning space.

or

2. Conduct and document faculty development sessions in the room, providing hands-on experience and group experimentation by potential instructors.

Potential strategies and approaches
• Create a class or design competition for innovative learning space design.
• Provide signage, displays, or other public means to explain how the learning space design enables more effective teaching and learning.
• Provide the opportunity (through physical or technological means) to observe or demonstrate how the space is being used.
LSRS PDP Credit 5: Evaluation Plan

Intent
To understand whether the potential of the space has been realized in practice

1 Point

Criterion for credit
Create an evaluation plan to determine the degree to which the design aspirations or goals have been met, and provide plan documentation.

Potential strategies and approaches
- Assess the space performance in relation to the project goals.
- Identify observable, concrete measures of success.
- Employ multiple means of evaluation (e.g., quantitative, qualitative, observation).
- Gather baseline data (e.g., usage and satisfaction) and compare with post-occupancy evaluation of the same.
- Utilize established survey instruments, scoring rubrics, or other assessment tools.
LSRS PDP Credit 6: Dissemination of Findings

Intent
To share findings and lessons learned from the research, planning, piloting, or evaluation of learning space(s).

1 Point

Criterion for credit
Make publicly available research, evaluation, piloting, or planning findings so that other institutions can benefit from this work.

Potential strategies and approaches
- Make findings and project design information available through institutional websites.
- Findings can contain engagement strategies, best practices employed, evaluation findings, key design principles that informed the design, and pilot projects.
- Publish articles or papers.
- Host or participate in conference or symposium with published and/or recorded proceeding.
- Contribute to a repository of learning space case studies.
PDP Credit 7: Innovation in Planning and Design

Intent
To create exemplary spaces or planning strategies that provide novel or unique features and benefits that advance the practice of learning space design.

1 Point

Criteria for credit
Provide evidence of an initiative or project demonstrating innovation and/or leadership with respect to design or planning of learning spaces in a way that falls outside of previous PDP Credits 1-6.

Potential strategies and approaches
• Demonstrate novelty or uniqueness based on comparison to surveyed literature and best-practice.
• Employ emerging technology as identified through 3rd-party technology trending publication (e.g., NMC Horizon Report, ECAR National Study of Undergraduate Students and Technology, and/or Gartner Emerging Trends and Technology Report).
LSRS Section 3 – Support and Operations (SO)

Credits included in this section:

1. Support
2. Space Orientation and Training
3. Training of Support Team
4. Faculty Development
5. Sustainability of Operations
6. Diverse Patterns of Use
7. Scheduling Systems
8. Innovation in Support and Operations

Total points available in this section: 8

Weighted percentage of total points available: 15
LSRS SO Credit 1: Support

**Intent**
To provide ongoing, timely, physical and/or virtual support for learning spaces.

**1 Point**

**Criteria for credit**
To obtain credit, do one of the following:

1. Provide ability to contact responsible support professionals for help from within the learning space.

or

2. Provide ability for support professionals to remotely monitor room systems to identify and respond to problem issues.

or

3. Provide documentation in the space and/or online that describes the capabilities of the room, answers frequently asked questions, and describes typical usage scenarios of activities, technologies, and furniture configurations.

**Potential strategies and approaches**
- Provide a support line so that users can have a direct communication to classroom support professionals.
- Provide virtual support via remote desktop or similar technology such that media / technology configurations can be viewed and adjusted remotely.
- Provide more than standard support during initial commissioning period for new spaces, and at the beginning of a new term (when faculty may be trying new approaches) for existing spaces.
- Provide logging systems to collect analytics data on how features of the room are used by instructors and students.
- Cluster learning spaces together and assign a learning space professional to act as main point of contact for managing furniture, technology, and equipment.
- Create video resources that demonstrate potential activities and configurations of space, as well as frequently encountered issues and their solutions.
- Create and implement a furniture management plan that provides direction on how furniture should “reset” to a default configuration and how it will be reconfigured and managed.
LSRS SO Credit 2: Space Orientation and Training

Intent
To ensure that orientation and training on the specifics of a learning space are available to the students, faculty, and staff using them.

1 Point

Criteria for credit
To obtain credit, do one of the following:

1. Offer a regularly scheduled user orientation that introduces the functionality of the furniture, technology, and other equipment and environmental systems associated with the space. At a minimum, upon completion of the session, users should be:
   • aware of the different furniture configurations for the room
   • able to operate control systems for projection, audio, lighting, conferencing, etc.
   • know how to obtain additional support

or

2. Provide online tutorials with suggested room configurations, including explanations of feasible options and activities the room can support. This resource may be combined with online resources created for SO Credit 1. As with option 1, users should be:
   • aware of the different furniture configurations for the room
   • able to operate control systems for projection, audio, lighting, conferencing, etc.
   • know how to obtain additional support

Potential strategies and approaches
• Provide a rehearsal space with equivalent technologies where faculty can receive an orientation and associated training and coaching. Rehearsal spaces may also provide video capture for later review.
• Provide incentives for faculty to attend orientation sessions.
• Orientation sessions could include presentations or instructional scenarios to show how technology systems in the room could be utilized to support pedagogical activities.
LSRS SO Credit 3: Training of Support Team

**Intent**
To ensure that the learning space support team can troubleshoot, solve, and address commonly encountered problems in the learning space reactively and proactively.

1 Point

**Criterion for credit**
Create, execute, and evaluate an internal training program for staff, including defining the necessary competencies, hypothetical problem scenarios and solutions, and success measures, including but not limited to customer service skills and tools and technology training.

**Potential strategies and approaches**
- Create user profiles that describe the needs and typical activities for different types of users.
- Map the user/customer journey and identifying service points where services are provided.
- Require staff to achieve certification in tools or technology. InfoComm CST audiovisual certification is one example.
LSRS SO Credit 4: Faculty Development

Intent
To enable continuous learning and development of faculty in the use of new technology, tools, and capabilities of learning spaces.

1 Point

Criteria for credit
To obtain credit, do one of the following:

1. Offer educational opportunities for faculty to learn about new techniques and technologies and discuss opportunities and challenges with peers and support staff.

or

2. Provide online resources such as articles, FAQs, and support contact information to assist faculty.

or

3. Provide instructional/learning space design consultation with faculty, by appointment as requested.

Potential strategies and approaches
• Provide space and consultation to assist faculty in developing classroom materials and activities.
• Facilitate the observation, evaluation, and coaching of faculty in reviewing their teaching practices through the use of rehearsal spaces, video capture, or observation in the teaching space itself.
• Offer case studies for the space that describe learning objectives, potential activities, and benefits.
LSRS SO Credit 5: Sustainability of Operations Over Time

Intent
To manage resources so that learning spaces can perform as intended and be maintained, supported, and improved over time.

1 Point

Criteria for credit
To obtain credit, do both of the following:

1. Create, execute, and evaluate a resource management plan for learning spaces which covers anticipated expenditures for technology, furniture, and operations.

and

2. Maintain a clear process to change and update the resource management plan on an annual basis that reflects changes in technology and use patterns.

Potential strategies and approaches
• Benchmark resource management planning and allocation at peer schools.
• Develop appropriate chargeback policies for events outside the unit, especially those that are charging participants to come to campus (e.g., summer conferences).
LSRS SO Credit 6: Diverse Patterns of Use

**Intent**
To operate and support learning spaces to enable the highest possible utilization and to provide users more choices in where and when to learn.

1 Point

**Criteria for credit**
To obtain credit, do both of the following:

1. Meet or exceed 65% utilization during a 45 hour week for regularly scheduled classes.

and

2. Provide flexible access to learning space for students and faculty outside of the typical 45-hour week; such as night-time, overnight, weekend, and/or whenever regular classes are not in session (e.g., summer)

**Potential strategies and approaches**
- Develop space management policies that encourage the use of learning spaces by multiple user populations (e.g., use of classrooms or staff conference rooms by students studying at night).
LSRS SO Credit 7: Scheduling Systems

Intent
To provide users with a room scheduling system that enables them to match their teaching and learning needs with learning space availability and capabilities.

1 Point

Criterion for credit
Create and maintain a room scheduling system, which includes information on space attributes such as total area, area per station/seat, flexibility of furnishings, potential configurations, available technologies, and equipment capabilities.

Potential strategies and approaches
• Incorporate information in the class scheduling database on walking time/distance to the “heart” or center of campus.
• Investigate how different course schedules of colleges or programs may be a deterrent or promote active learning pedagogies. For example, some active learning pedagogies may benefit from more extended class periods to enable collaborative group work or project activities.
• Gather information to discover why certain rooms might be more or less popular than others. Conduct data gathering in an ongoing way.
• Seek to develop online scheduling systems that allow spaces to be booked on demand by faculty and/or students when not scheduled in order to utilize space resources across campus more efficiently.
LSRS SO Credit 8: Innovation in Support and Operations

Intent
To create innovative ways to support and operate learning spaces.

1 Point

Criteria for credit
Provide evidence of an initiative or project demonstrating innovation and leadership with respect to the support and operation of learning spaces in a way that falls outside of previous SO Credits 1-7.

Potential strategies and approaches
- Design and implement an innovative program for engaging with faculty and students on ways to utilize the learning space.
- Design and implement an innovative program for training support staff to monitor the learning space and provide timely and efficient support.
- Design and implement a system of analytics that monitors the use of different aspects of the learning space’s equipment and layout to determine if the learning space’s design overlaps with ways the room is actually used.
- Create and maintain an exemplary service level agreement (SLA) or other framework that defines levels of support and service between the service provider and the users of the space.
LSRS Section 4: Environmental Quality (EQ)

Credits included in this section:

1. Daylight
2. Views to Exterior
3. Interior Visibility
4. Lighting Control
5. Thermal Comfort
6. Acoustic Quality
7. Environmental Stimulation
8. Innovation in Environmental Quality

Total points available in this section: 8

Weighted percentage of total points available: 20
LSRS EQ Credit 1: Daylight

Intent
To support learning and improve concentration and engagement by providing daylight into learning space.

1 point

Criterion for credit
Provide direct access (e.g., windows) or indirect access (e.g., skylights or clerestory windows) to daylight and the means to control it with veiling screens, blinds or blackout screens.

Potential strategies and approaches
● Refer to LEED v4 EQ Credit for Daylight (Building Design + Construction: Schools) for best practice standards.
LSRS EQ Credit 2: Views to Exterior

**Intent**
To support learning and engagement by providing windows with views to the exterior.

1 point

**Criterion for credit**
Provide direct line of sight to the exterior (i.e., through glass) with quality views that include vegetation, human activity, or objects at least 25 feet from the exterior of the window.

**Potential strategies and approaches**
- Refer to LEED v4 EQ Credit for Quality Views (Building Design + Construction: Schools) for best practice standards.
LSRS EQ Credit 3: Interior Visibility

**Intent**
To provide adequate visibility within a space from participants to presenters, to course content, to demonstrations, and to other participants.

1 point

**Criteria for credit**
To obtain credit, do one of the following:

1. Discussion-focused spaces: Provide unobstructed views for all participants to see one another.

or


or

3. Team-based spaces: Provide views that enable team members to easily collaborate and use shared displays or other equipment together.

or

4. Versatile spaces: Conform to InfoComm best practices for sight lines, per above, and provide unobstructed views for group participants in discussion areas, displays and writable surfaces.

**Potential strategies and approaches**

- Maximize ability of participants within the audience to face one another (e.g., case study room layouts).
- In versatile spaces, enable participants to see presenters and/or visual displays and/or writable surfaces by turning their chairs up to 180 degrees.
- Consider trade-offs between sightline quality and ease of supporting both small group work and presentations. For instance, in tiered rooms, it may be desirable to provide two rows of students per tier with slightly compromised sightlines (see Section 6 TT Credit 3: Visual Displays).
- Provide adequate ceiling height such that the audience can see both presenter and screens simultaneously. See InfoComm AV Design Reference Manual, Chapter 13: Interior Design.
LSRS EQ Credit 4: Lighting Control

Intent
To ensure optimal flexibility of lighting appropriate to different learning activities.

1 point

Criteria for credit
Provide dimming capability or preset controls for separate zones, such as for a main seating area and for perimeter boards/screen areas.

Potential strategies and approaches
- Create consistency of lighting control systems across classroom stock.
- Design preset controls to accommodate a range of different activity use cases.
- In areas of informal small group or individual seating, enable users with controls to moderate the lighting to be appropriate to their activities (e.g. by task lighting).
LSRS EQ Credit 5: Thermal Comfort

Intent
To ensure that thermal conditions of spaces are conducive to learning.

1 point

Criteria for credit
To obtain credit, do both of the following:


and

2. Provide thermal comfort controls, such as windows, a thermostat, or other means to adjust at least one of the following in the room: temperature, air speed and/or humidity.

Potential strategies and approaches
● Refer to LEED BD+C: Schools v4 Credit requirements for “Thermal Comfort”.
● Note that if occupants remark on the temperature of the space then it is either too hot, too cold, or fluctuating too much – and therefore taking attention away from learning.
LSRS EQ Credit 6: Acoustic Quality

Intent
To enable occupants to hear presenters, audio content, and one another through effective acoustic design of the room.

1 point

Criteria for credit
To obtain credit, do both of the following:

1. Follow American National Standards Institute (ANSI)/ASA S12.60-2010/Part 1 (Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools) standards for acoustics in core learning spaces and ancillary learning spaces. These include noise isolation design requirements and specific limits on background noise and reverberation from building services and utilities.

and

2. Design acoustics to enable participants farthest from the sound source to have a comparable listening experience to participants closest to the source. Provide sound amplification system if needed: See Section 6 TT Credit 4: Sound Amplification.

Potential strategies and approaches
- Refer architects to ANSI/ASA S12.60-2010/Part 1 for design guidelines for various size spaces including large classrooms and lecture spaces and for use of sound-absorbing materials and acoustical treatments.
- See ANSI guidelines also for recommendations about effects of carpeting and furnishings on acoustics.
LSRS EQ Credit 7: Environmental Stimulation

Intent
To create an aesthetically pleasing and stimulating atmosphere that helps promote student engagement in learning activities.

1 point

Criterion for credit
Provide evidence (such as survey or course evaluation data) that indicates that users perceive the physical environment to be pleasing, stimulating, engaging and/or otherwise conducive to learning.

Potential strategies and approaches
- Refer to benchmarks from the National Survey of Student Engagement (NSSE) such as those for "creating a supportive campus environment."
- Use color to enhance the learning environment and provide variety.
- Create a rich visual environment using curves and shapes to go beyond a white-walled box for classrooms.
- Use high quality finishes and furnishings to convey a sense of professionalism.
- Showcase the institution’s cultural diversity and values with artifacts, designs, and artworks that illustrate it.
- Showcase student work through physical or digital displays.
LSRS EQ Credit 8: Innovation in Environmental Quality

**Intent**
To create innovative ways to enhance the environmental qualities of learning spaces.

1 point

**Criteria for credit**
Provide evidence of an initiative or project demonstrating exceptional innovation and/or leadership with respect to the environmental qualities of learning spaces in a way that falls outside of previous EQ Credits 1-7.

**Potential strategies and approaches**

- In building retrofits, design innovative ways to bring daylight and/or natural ventilation into enclosed interior spaces.
- Create novel ways to draw people into and engage them in a space.
- Design new ways to showcase campus diversity and/or faculty, student, or staff work in learning spaces.
LSRS Section 5: Layout and Furnishings (LF)

Credits included in this section:

1. Proximities within Space
2. Movement through Space
3. Seating Density
4. Furnishings Layout
5. Furniture Configuration
6. Work surface
7. Furniture Comfort
8. Movable Partitions
9. Transparency
10. Access to Adjacent Informal Learning Areas
11. Writable Surfaces
12. Physical Storage
13. Future Proofing
14. Innovation in Layout and Furnishings

Total Credits in this Section: 14

Weighted percentage of total points available: 20
LSRS LF Credit 1: Proximities within Space

Intent
To configure the room proportions of a space to optimize equal access among people, displays, and writable surfaces in order to facilitate its primary learning activities.

1 point

Criteria for credit
To obtain credit, do one of the following:

1. Discussion-focused spaces: Minimize distance between all occupants and maximize participants’ ability to face each other.

or

2. Presentation-focused spaces: Optimize proximity between the speaker and the greatest percentage of the audience.

or

3. Team-based spaces: Devote sufficient space for group participants to face one another and/or to access writable surfaces or shared visual displays.

or

4. Versatile spaces: Prioritize equal access from seats to writable surfaces, visual displays, and other seats

Potential strategies and approaches
- Design spaces closer to a square proportion to facilitate interaction and reconfigurability.
- For presentation-focused spaces, make spaces wider than they are deep so as to minimize the distance between the speaker and the audience, while still providing for good sight lines (refer to Section 4 EQ Credit 2: Good Visibility).
- Provide ceiling height in proportion to room area.
- Refer to definition of the four spaces types in the Introduction.
**LSRS LF Credit 2: Movement Through Space**

**Intent**
To enable the easy movement of instructors and learners within the space to support communication and to facilitate interaction.

1 point

**Criteria for credit**
To obtain credit, do one of the following:

1. Discussion-focused spaces: Enable participants to walk between table and walls in order to access writable surfaces, displays, and one another.

or

2. Presentation-focused spaces: Rows should not exceed 20 uninterrupted chairs in a row. Rows of 5 or more seats should have aisles on either side (not dead-ends).

or

3. Team-based spaces: Provide sufficient space and pathways for instructors and peers to circulate when the space is configured for group

or

4. Versatile spaces: Provide adequate space between tables or work areas for all participants to circulate, interact, and recombine in different teams.

**Potential strategies and approaches**
- Where a tiered or sloped floor configuration is desirable, consider sloped aisles rather than stepped to allow more universal access options and easier circulation.
- With a tiered floor configuration, consider limiting the slope or ratio of the rise (vertical) over run (horizontal) to 1:2 so as to avoid overly steep stairs.
- With a sloped floor configuration without stairs, consider limiting the slope of the room (vertical) over run (horizontal) to 1:12 so as to enable ADA access and avoid overly steep slopes.
LSRS LF Credit 3: Seating Density

Intent
To ensure that the density of seating and the space allocated per seat (including circulation and presenter/stage areas) to support the desirable range of potential learning activities.

1 point

Criteria for credit
To obtain credit, do one of the following:

1. Discussion-focused spaces: provide at least 25 square feet per participant.

2. Presentation-focused spaces: provide at least 20 square feet per participant

3. Team-based spaces: provide at least 30 square feet per participant.

4. Versatile space: provide at least 25 square feet per participant.

Potential strategies and approaches
- Provide adequate space based upon seating density, type of furnishings, size of the learning space, and range of potential learning activities.
- As the space per seat increases so does (a) the different ways in which people can interact with others, information, and tools/equipment and (b) the different ways the space can be reconfigured to enable these interactions.
- For reconfigurable, active learning spaces in which tables, chairs, and displays may be moved or configured into different layouts (e.g.: “U-shaped” to clusters of tables).
- Tablet arm chairs, although efficient in area allocation, are acknowledged to be poor in supporting active learning pedagogies and the use of technology. The migration of existing spaces to other types of seating more appropriate for active learning will require a higher area per seat.
- Allow sufficient space for room reconfiguration options. The greater the need for flexibility of layout, the more space per seat is needed. Special equipment, such as fixed computers or lab equipment, may require more space per seat.
LSRS LF Credit 4: Furnishings Layout

**Intent**
To ensure that the layout of furnishings supports a wide range of potential learning activities.

1 point

**Criteria for credit**
To obtain credit, do one of the following:

1. Discussion-focused spaces:
   - Facilitate multiple options for small group or plenary session work (e.g., groups of 3 to 9 at a round table) with movable chairs
   - Ensure furnishings are easily movable and configurable by users into small groups of various sizes, as well as alternative large group activities.
   - Create team discussion/work areas on each tier with clusters or sets of movable tables.

or

2. Presentation-focused spaces:
   - Configure layout and aisles so that instructor(s) and peers can circulate and reach within 15 feet of every participant to facilitate interaction and dialogue
   - Create team discussion/work areas on each tier with clusters or sets of movable tables.

or

3. Team-based spaces:
   - Facilitate multiple options for small group or plenary session work (e.g., groups of 3 to 9 at a round table) with movable chairs
   - Ensure furnishings are easily movable and configurable by users into small groups of various sizes, as well as alternative large group activities.

or

4. Versatile spaces:
   - Ensure furnishings are easily movable and configurable by users into small groups of various sizes, as well as alternative large group activities.

**Potential strategies and approaches**
- Fixed seats that swivel allow group conversations in lecture-style rooms.
- Configure tiers to two rows of seats to allow participants to turn and face the row behind (e.g., with continuous counter work surfaces).
- Consider the potential for reconfiguration or a change in function in the future. For example, tiered lecture hall seating can be built with steel frame structures rather than poured concrete.
- Allow for adequate space for instructors and learners to circulate within the rooms when choosing furniture and sizing rooms (see Section 5 LSRS LF Credit 2: Movement through Space.)
- Regarding best practices for maintaining sight lines, see Section 4 EQ Credit 2 Good Visibility.
- Consider using non-hierarchical table layouts (e.g., round or square tables) in order to facilitate discussion.
LSRS LF Credit 5: Furniture Configuration Movability

Intent
To provide furniture that is easily movable

1 point

Criterion for credit
Provide tables and chairs that are both stable and easily movable

Potential strategies and approaches
● Seating types can range from tablet arm chairs, tables with chairs, continuous counter seating with either movable or fixed, pivoting chairs.
● In general it is recommended that movable chairs be provided wherever possible, rather than fixed chairs.
● Consider stackable type chairs and tables, because they can be stored compactly to the side if the room needs to be used for other purposes
● Within presentation-focused spaces that have two rows of tables per tier, consider either fully-movable chairs or chairs that swivel at least 180 degrees so that students in the front of two rows can turn to work with students in the back of the two rows
● Specialty items like presenter lecterns should also be considered for ease of mobility.
**LSRS LF Credit 6: Work Surface**

**Intent**
To provide furniture that provides adequate work surface to accommodate several devices and paper resources that learners may bring.

1 point

**Criterion for credit**
Provide sufficient work surface area per seat, sized to enable simultaneous use of a laptop, tablet or other portable devices as well as paper materials.

**Potential strategies and approaches**
- Work surfaces are recommended to be at minimum thirty inches wide by twenty-four inches deep minimum to accommodate mobile computers. For this reason tables and chairs are preferred over tablet armchairs.
- Typical tablet arm chairs are not recommended; consider types on wheels that are designed with larger work surface area. Some left-handed tablet arm chairs should be provided. Alternately, consider choosing furniture that does not have a bias as to left- or right-handedness.
LSRS LF Credit 7: Furniture Comfort and Durability

Intent
To provide furniture that is comfortable for extended periods of time (more than an hour) and durable.

1 point

Criterion for credit
Provide seating that balances human comfort and durability

Potential strategies and approaches
● Provide adjustability in terms of height, pitch, or in other dimensions
● Provide furniture to accommodate range of user sizes
● Choose furniture fabrics that can sustain more than 15,000 double rubs
● Choose fabrics that are designed to be stain, water, and microbe resistant
LSRS LF Credit 8: Movable Partitions

**Intent**
To equip a space with capability of partitioning areas off for different learning activities and group sizes.

1 point

**Criteria for credit**
To obtain credit, do one of the following:

1. Provide built-in movable wall partition(s), either sliding panels on ceiling tracks or motorized retractable ceiling-mounted types. Documentation for credit must include descriptions how the movable partitioning supports a greater range of learning activities or can enable a more intensive use of a space at different times.

or

2. Provide a movable panel system with components that can be manipulated by users of the space, such as writable panels on wheels, a panel system designed to hang from a ceiling grid or wall hangers, or other solution that allows definition of the subdivision of the activity areas.

**Potential strategies and approaches**
- When making spaces sub-dividable, consider whether the proportions of the resultant spaces will be satisfactory for accommodating desired learning activities.
- Consider acoustic quality and ease of operation of panel systems to ensure users accept potential trade-off of diminished acoustic performance in exchange for greater flexibility, depending on product/system selected.
LSRS LF Credit 9: Transparency

Intent
To provide visual connections between adjacent but physically separate spaces so as to enable exposure and visibility into learning activities.

1 point

Criteria for credit
To obtain credit, do one of the following:

1. Provide views through the building from circulation areas through the use of transparent materials or the introduction of atria or openings between floors to allow sightlines between floors or major areas.

or

2. Provide transparent vision panels that allow views into and out of the spaces where learning activities occur.

or

3. Showcase products of learning activities (e.g., digital displays with video loops, walls for poster displays, ceiling grids from which objects can be hung, convenient tack boards, whiteboards in public spaces, etc.)

Potential strategies and approaches
● Consider the extent to which users can control the amount of transparency of the space.
LSRS LF Credit 10: Access to Adjacent Informal Learning Areas

Intent
To allow learning activities to extend into adjacent or ancillary areas, encouraging interaction and extension of the learning experience.

1 point

Criteria for credit
To obtain credit, do one of the following:

1. Intersperse informal learning spaces with formal teaching spaces. For example, include break-out areas or “front porch” spaces near classrooms for connecting before or after class.

or

2. Provide sliding doors or movable walls to connect activities in adjacent areas. For example, use sliding barn doors to open up a classroom and transform it into an after hours informal study space.

Potential strategies and approaches
● Provide 3-5 ASF per classroom seat of informal learning space outside of rooms to support discussion before and after class.
● Provide seating for short, ad hoc meetings and gatherings before or after class.
LSRS LF Credit 11: Writable Surfaces

Intent
To provide writable surfaces to facilitate interaction for individuals and groups.

1 point

Criteria for credit
To obtain credit, do one of the following:

1. Provide physically accessible surface/display visible to all participants upon which the presenter can write physically and/or digitally.

or

2. Provide multiple, physically accessible surfaces/displays visible to all participants upon which participants can write physically and/or digitally.

Potential strategies and approaches
- Provide large, wall mounted whiteboards/blackboards and/or flipcharts.
- Provide writable wall surfacing (e.g., whiteboard paint) on one or multiple walls.
- Provide movable writable panels, either on casters, or wall, or ceiling mounted system.
- Provide interactive wall screens with writable surface to enable manipulation of information.
- Provide writable table surfaces (e.g., glass, whiteboard, stone).
- Provide digitally-interactive table surfaces that enable writing with gestures and/or stylus.
LSRS LF Credit 12: Physical Storage

Intent
To provide storage space adjacent to or within learning spaces for equipment or furnishings.

1 point

Criteria for credit
To obtain credit, do one of the following:

1. Provide enclosed walk-in storage room sufficient to store extra furnishings and carts.
   or
2. Provide enclosed closet.
   or
3. Provide lockable furniture cabinet within room.

Potential strategies and approaches
● As a guide for flexible or multipurpose rooms with 50 seats or more, provide furniture and equipment storage equivalent to 5 to 10% of the room area.
● When sizing storage space, the following functions should be considered:
  ● To support technology-enabled learning, e.g. large displays that can be wheeled into the learning space to support team based learning clusters.
  ● To store and recharge computational devices, e.g. such as laptops issued to all members of a class for individual or shared use.
  ● To enhance a disciplinary-specific course, e.g. with artifacts, resources, teaching kits or handout.
  ● To store additional furniture components so that the layout can be changed rapidly to accommodate a different type of activity, e.g. folding tables on casters, stackable chair,
  ● To store movable whiteboards, nesting type on casters that store compactly.
LSRS LF Credit 13: Future Proofing

Intent
To ensure that learning spaces can inexpensively evolve over time.

1 point

Criteria for credit
Provide evidence that a room’s infrastructure can support or adapt to changing uses over time.

Potential strategies and approaches
● Install a raised floor
● Provide a grid of power distributed across the floor
● If tiers are present, build them in a removable way
LSRS LF Credit 14: Innovation in Layout and Furnishings

Intent
To provide creative, innovative leadership in the layout and furnishing of learning spaces.

1 point

Criteria for credit
Provide evidence of an initiative or project demonstrating creative innovation and leadership in the layout and furnishing of learning spaces in a way that falls outside of the LF Credits 1-10.

Potential strategies and approaches
- Work with furnishing vendors to introduce improvements in existing classroom furniture lines.
- Show how original layouts and furnishing specifications support key campus strategic objectives in teaching and learning.
- Create a plan for layout and furnishing that obtains points for each of the LF Credits.
LSRS Section 6: Technology and Tools

Credits included in this section:

1. Electrical power
2. Network Connectivity
3. Visual Displays
4. Sound Amplification
5. Audio/Visual Interface and Control
6. Distributed Interactivity
7. Session Capture and Access
8. Innovation in Technology and Tools

Total points available in this Section: 9

Weighted percentage of total points available: 20
LSRS TT Credit 1: Electrical Power

Intent
To ensure that all participants in a space have access to electrical power to support the wide variety of technologies used in learning activities.

1 Point

Criterion for credit
Provide convenient access to electrical power for end user devices through dedicated power outlets for each participant, through shared outlets (e.g., at table clusters), or charging stations.

Potential strategies and approaches
- Outline a range of desirable or anticipated activities and their power requirements to determine appropriate capacity for a range of usage scenarios.
- Use a distribution grid in the floor to provide flexibility in positioning power receptacles and to accommodate multiple layout options.
- Provide appropriate raceways, receptacle locations, or cable management such that cables do not obstruct traffic paths.
- Provide charging stations in the building.
LSRS TT Credit 2: Network Connectivity

**Intent**
To enable adequate network performance and access for all participants and intended learning activities.

1 Point

**Criterion for credit**
Provide wired connectivity to strategic areas of the room that require high-bandwidth/low-latency connections and wireless connectivity with activity appropriate bandwidth, latency, and capacity to support connections for all occupants.

**Potential strategies and approaches**
- Outline range of desirable or anticipated activities and their potential bandwidth requirements to determine appropriate bandwidth capacity.
- Determine cabled connectivity requirements at strategic points (e.g., presenter station, participant clusters, etc.) to allow for several different configurations.
- Design flexibility to allow for increased connectivity as demanded by course applications (e.g., firewall settings, traffic shaping).
LSRS TT Credit 3: Visual Displays

Intent
To enable robust sharing of visual data by making it easily available, visible, and/or readable by all participants.

1-2 Points

Criterion for credit
To obtain credit, do the following:
Provide at minimum a single visual display appropriate to the intended room use and function, layout, dimensions, and content types. Displays should allow multiple input with the ability to adapt easily to evolving cabling and input standards.

To obtain an additional point, do the following:
Provide multiple displays, fixed and/or mobile, as allowed by the capacity and configuration of the room to support presentation, discussion, and collaboration activities for some or all participants.

Potential strategies and approaches
- Provide lighting and window treatment controls at projection and display locations. The control of ambient light affects image contrast. See Section 4 EQ Credit 3: Lighting Control.
- When considering interior design and colors, use darker, matte (non-reflective) paint colors near screens to aid with image contrast.
LSRS TT Credit 4: Sound Amplification

Intent
To enable high quality audio reinforcement in support of learning and teaching activities.

1 Point

Criterion for credit
Ensure evenly distributed presentation and audio content for all participants by basing the number and location of audio speakers on the purpose and characteristics (including size and acoustics) of the room, as per ANSI/ASA S12.60-2010/Part 1 standard for classroom audio distribution systems (5.5.1) for uniformity of coverage and sound pressure levels.

Potential strategies and approaches
● Refer to 1991 ADA Standards for Accessible Design 4.1.3 (19) (b) and 2010 Standards section 219, and relevant state guidelines, for the use of Assistive Listening System (ALS) shields to accommodate participants with hearing impairments.
LSRS TT Credit 5: Audio/Visual Interface and Control

Intent
To enable instructors and students to seamlessly manage audio/visual content across multiple output systems including installed displays, computers, and mobile devices.

1 Point

Criterion for credit
Provide a graphical user interface-based switching control for device and room setting that allows for the control of A/V technology by instructors and students.

Potential strategies and approaches
- Provide ability to manage content across multiple outputs.
- Provide ability to manage content across personal devices, team displays, and room displays.
- Provide ability to manage access to control capabilities for shared resources.
- Allow interface control from student devices as well as from “traditional” instructor station control point(s).
- Provide ability to introduce content to entire group using personal device or other sources.
- Provide ability to share content easily with each other, one-on-one, or with small group.
LSRS TT Credit 6: Distributed Interactivity

**Intent**
To enable full, synchronous participation in learning activities by groups in multiple, disparate locations.

1 Point

**Criterion for credit**
Enable participants at each connected location to perceive each other’s actions, allowing them to work collaboratively in creating, sharing, annotating, and displaying information, all at appropriate performance levels.

**Potential strategies and approaches**
Consider systems that enable any of the following scenarios:
- A presentation to be shared between multiple sites.
- Student questions/commentary to be shared between multiple sites.
- Student small group discussions to be shared between multiple sites.
- Ability for different participants to transparently switch between roles (e.g. presenter, editor) across multiple locations.
LSRS TT Credit 7: Session Capture and Access

**Intent**
To record presentations, group interactions, or conversations with local and remote participants, and make these artifacts accessible asynchronously.

1 Point

**Criterion for credit**
Capture presenter image, audio, and content, and have the ability to record whiteboard/blackboard annotations.

**Potential strategies and approaches**
- Provide video and/or audio recordings in formats that permit consumption with a variety of devices.
- Integrate session capture controls with room AV controls.
- Capture presentation and synchronized audio in a format that can be redistributed to users outside the classroom, e.g. via a learning management system and/or mobile devices.
LSRS TT Credit 8: Innovation in Technology and Tools

Intent
To enable new ways to interact among people and content with creative technological solutions or innovative tools.

1 Point

Criterion for credit
Document the successful implementation of a new solution or emerging technology for providing electrical power, network connectivity, visual displays, AV control, distributed interactivity, or session capture and access that exceeds the scope of the LSRS TT Credits 1-7.