

Innovative Learning Building Committee Report

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Executive Summary

The Innovative Learning Building (ILB) Committee, as a subcommittee of the Wallace Center Innovative Learning Complex (WCILC) Committee, has been charged with providing a detailed proposal of the active learning needs of RIT including, in sq. ft. and quantity, the types and descriptions of these spaces.

The committee met five times during Spring semester, 2017 and determined a number of ways to answer the charge. Members of the subcommittee included faculty from each of RIT's colleges, including NTID, representatives from Academic Senate, Student Government, Student Affairs, the Registrar's office, International education/Global programs, and The Wallace Center.

Based on data collected from faculty and student government surveys, benchmarks, and recommendations from RIT's Space Utilization Committee, the ILB subcommittee is recommending the following:

- The creation of 43 new formal learning spaces, utilizing 60,540 square feet
- A combination of flexible and group work type rooms
- Formal learning space designs that integrate with adjacent informal learning spaces
- The development of a robust learning space strategy for RIT, including the formation of a master plan of room types and room standards, and a catalogue of RIT room types across campus

Recommendations regarding characteristics of formal learning spaces were derived by mapping survey data to Educause's Learning Space Rating System (LSRS). The LSRS provides a comprehensive system to measure active learning room attributes by providing "a set of measurable criteria to assess how well the design of classrooms support and enable active learning." The needs assessments gathered by this committee support the criteria in the LSRS, in turn providing useful insight into the attributes for formal learning space designs that provide support for active learning. The recommended quantity and size of the formal learning spaces are based on a combination of RIT's Space Utilization Committee's recommendations and an appropriate match to room type based on attributes from the LSRS.

Needs Assessment

Initial discussions of this committee focused on ways in which to provide a 'detailed proposal of the active learning needs at RIT,' as outlined in the charge. Early discussions revealed that the definition of "active learning" is subjective, sometimes contentious, and varies across college, discipline, and even personal preference.

Due to the varied understandings and opinions around the definition of active learning, this committee determined that a variety of tools would be beneficial to gather feedback from campus. The College of Science (COS) representative attended various department meetings to gather feedback, Golisano College of Computing and Information Sciences (GCCIS) and the College of Liberal Arts (COLA) representatives used a survey, and other colleges invited direct input from their colleagues at department meetings and similar settings. Student Government issued a survey that was part of a wider Wallace Center outreach and representatives from The Wallace Center Special Collections and RIT Press gathered faculty insight and supplied their own vision statements. Additionally, The Innovative Learning Institute (ILI) distributed a campus-wide survey, via email, to faculty and staff to gather feedback on how

RIT classrooms meet or do not meet learning needs (rather than asking questions specifically about active learning in this survey, the ILI researchers predicted that active learning needs would surface naturally as a subset of universal learning needs and features).

The various studies culminated in a rich and diverse set of responses related to the perception of active learning and the learning space needs on campus. Research staff from the ILI collated and analyzed the data from the ILI and Student Government surveys (Appendix B and C), which yielded 458 and 1155 respondents respectively. The team grouped the results into the most prevalent overarching themes and compared them to the college narratives and The Wallace Center representative statements (Appendix E) to confirm trends and add context. The total data set included the following high level learning space requirements:

1. More flexibility
2. Improved experience (less crowded, more comfortable, better sight lines etc.)
3. Support for collaboration and teamwork
4. Ability to teach globally and connect remotely to industry experts

To reaffirm that the requirements identified relate to active learning at the highest level, findings of the survey were mapped to the LSRS (Appendix C).

LSRS (Educause's Learning Space Rating System) is a project that provides a national perspective on active learning and a system to measure the potential of formal learning space. "The rating system enables institutions not only to examine the effectiveness of their own facilities but also to benchmark their environments against best practices within the higher education community, and thereby enable all to advocate for more effective learning spaces." The LSRS emphasizes the importance of defining and documenting the unique cultural characteristics and strategic direction of the university in question before determining the programming needs of new spaces. As the LSRS was developed to provide "a set of measurable criteria to assess how well the design of classrooms support and enable active learning" it was confirmed that the ILI team was correct in predicting that active learning attributes would prevail when faculty were asked about universal teaching needs.

Room Types and Attributes

The survey results, in combination with the application of the LSRS, outlined a number of design considerations to ensure that RIT builds formal learning spaces that support a variety of teaching and learning styles. High seating density, lack of access to students, awkward room layout, limited whiteboard space, bad sightlines, insufficient audio/visual equipment, and a lack of student work surface space were frequently mentioned as room attributes that created barriers to teaching and learning. Addressing the needs identified by this committee, including all items in Appendix C: Survey Findings and Room Attributes, should be a requirement when creating all new spaces, or renovating current classrooms.

This committee is recommending that the design of new formal learning space focuses on flexible, group work, and global learning space types, as outlined in the Teaching and Learning Services Learning Spaces Catalog (Appendix D). These room types were selected based on results of the faculty survey data (Appendix A) and how those results align with the LSRS categories (Appendix C).

The **Flexible Learning** room type (Appendix D) was developed to specifically address inflexibility, the number one barrier identified in the survey conducted by this committee. This room type supports the opportunity to teach in teams more collaboratively and also offers the potential for more hands on activities. Varying in size from small to large, there are three key components to this room type; easily movable furnishings, physical storage space, and movable partitions. These three elements, along with proper seating density, will give faculty and learners endless configuration options. There are a variety of flexible classroom types currently on campus, but many of these existing rooms do not score as highly as they could on the LSRS and require a more holistic approach to their implementation.



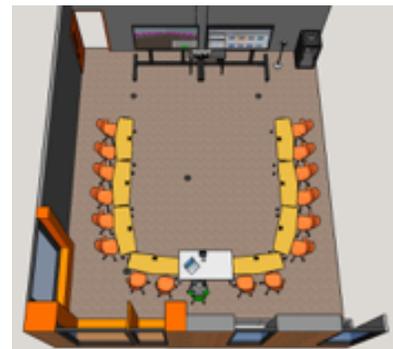
Flexible Learning Room Examples

The **Group Work** room type (Appendix D) was developed to satisfy the need to have technology that facilitates collaboration. Due to the infrastructure required to provide access to technology and to allow for easy sharing of content from a variety of devices, to small groups or a wider congregation, this layout is less flexible and tables are designed to remain in fixed locations. However, with proper design of the initial room layout and chairs that swivel students will still have a good line of site to instructional content and other learners. Many different activities are supported in this room type, making it ideal for group based work. There are a handful of group work room types that exist on campus, such as BRN-1110 and EAS-2372. A more intentional effort to pilot, research, and complete implementation of this room type will help inform design choices for the ILB.



Group Work Room Example

Global classrooms (Appendix D) will connect faculty to RIT's global campuses, while also providing the opportunity to remotely connect students and classes to industry experts. This room type may also be used in courses where whole cohort discussion is heavy. The room layout and configuration is centered on creating the best experience for users on both sides of a class connected by video conferencing technology. This room type has a less flexible seating arrangement, but provides flexibility of location while promoting active learning. A pilot project to inform design choices for this type of room is underway at RIT in the Steelcase Learning Lab (EAS-3287).



Global Classroom Example

Since many of the rooms proposed for the ILB will offset the loss of existing classroom space on campus it is important to consider the impacts of these room types on the traditional form of teaching. The flexible classroom type is intended for use with traditional lecture style teaching settings, in addition to a variety of other classroom activities. Loss of seats in each room is a compromise that needs to be taken into consideration. Flexible rooms require an additional 5-10 square feet, per person in the room. This additional square footage requirement will result in a loss of 6-15 seats per room, as compared to existing lecture type classrooms.

The room types proposed within this report are a starting point for the building designers. These room types provide potentially high scores on the LSRS and will support a number of innovative teaching practices today and well into the future. The exact number of each room type and the specific attributes of these rooms as best suited for RIT will continue to evolve as the project evolves.

Proposed Number and Size of Formal Learning Spaces

RIT's Space Utilization Committee consulted with CJS Architects and Dober Lidsky Mathey to conduct a space utilization study. As a result of that study, the consultants have projected the need for 11 additional general purpose classrooms to accommodate the projected future growth of RIT. The recommendation for 11 additional classrooms from the consultants does not include existing instructional space that will be repurposed for research, therefore increasing the need for classroom space in the new building from 11 to this committee's recommendation of 43.

Table 1: Room Recommendations

Room Classification	Room Quantity	Square Feet (each room)	Total Square Feet	Seating Capacity* (per room)	Total Additional Seats
Flexible Learning Rooms	25	900	22,500	30	750
Large Flexible Learning (multi-purpose) Rooms	1	4,680	4,680	150 (75 if divided)	150
Group Work Rooms	10	1,980	19,800	60 (30 if divided)	600
Large Group Work Rooms	2	4,680	9,360	150 (75 if divided)	300
Global Classrooms	5	840	4,200	25	125
Totals	43/54	---	60,540	---	1,875

Relationship of Formal and Informal Learning Spaces

Learning space design in the ILB should be considered holistically, including a tight integration between formal and informal learning spaces. Activities in the classroom should be allowed to continue after scheduled class time in space that is accommodating to students and their work. The desire for more informal learning space, that supports a diverse set of activities, has surfaced a number of times during the committee's discussions. This desire is also evident in the data collected by Student Government in their student survey (Appendix B). Access to adjacent, informal learning spaces is also identified in LSRS LF 5.9.

Formal learning space should also be adaptable and available for student use at times when classes are not scheduled in that particular space. The availability of flexible furnishings and room partitions supports this practice. Room scheduling systems at RIT will need to allow students to see when rooms are available and offer them the opportunity to reserve them, or request a reservation.

The Wallace Center (TWC) Subcommittee is providing recommendations to a number of different informal learning spaces. It is key that the designs for the ILB blend the work from this subcommittee with that of TWC subcommittee to form a collaborative recommendation for the WCILC as a whole.

Innovative Learning Institute Facilities

The ILI requires new and expanded office facilities to create a community of practice around teaching innovation and increase department efficiency. Bringing TLS and RIT Online staff together in one space will make the ILI more efficient and allow staff increased opportunity to collaborate on new initiatives. The new space should support the unique collaborative requirements of the ILI, such as studio, meeting, training, and support desk space to work alongside faculty to accomplish their goals, as well as space for future staffing needs of the ILI and additional faculty office space.

Space Occupant	Type	Quantity	sq. ft.	Total sq. ft.
Director Offices	Administrative Office	3	120	360
Staff Offices	General Office	26	96	2,496
Future Faculty/Staff Offices	General Office	30	96	2,880
Service Desk/Reception	Public	1	800	800
Faculty Training Breakout	Faculty Development	2	200	400
Faculty Computer Lab	Faculty Development	1	400	400
Media Production Studio	Faculty Development	2	600	1,200
Conference/Training (30 People)	Faculty Development	1	990	990
Kitchenette	Event Support/Catering Support	1	200	200
Media Production Offices	Student Staff Offices*	1	500	500
Classroom Technology Workshop	Student Staff Offices*	1	800	800
Classroom Technology Service Staff	Student Staff Offices*	1	400	400
Classroom Technology Co-op Office	Co-op Student Staff Offices*	1	200	200
Classroom Technology Storage	General/Storage Space	1	400	400
ILI Co-op Students	Co-op Student Staff Offices*	1	200	200
Office Storage	General/Storage Space	1	200	200
				12,426

*Student offices will accommodate multiple students

Robust Learning Space Strategy for RIT

This committee is also providing a number of recommendations related to learning spaces across campus, beyond the construction of the ILB. RIT should continue to invest in existing classroom space across campus. Based on feedback from multiple colleges, the committee emphasizes that Active Learning Classrooms (ALCs) are part of a campus strategy that also includes traditional classrooms; there is no implied “hierarchy of best design.” The entire range of classroom types, a wide spectrum that supports a diversity of teaching styles, deserves investment in upkeep, and RIT should convene key stakeholders to develop a Learning Space Master Plan (LSMP) for the Henrietta campus.

The LSMP would include a standing committee, that will be tasked with reviewing all renovations and make the case for updating all learning space, formal and informal, across RIT. McGill University is a good peer model to emulate in this regard (<http://www.mcgill.ca/tls/spaces/principles>). This new standing committee would be integral in the design of the ILB and would continue to work on improving all learning spaces at RIT.

Incorporating and refining RIT’s use of Educause’s LSRS guidelines for room design will help inform design choices and room features. Learning space planning and scoring using the LSRS can begin immediately with a few select renovations to current space. These immediate renovations can be used to evaluate and inform decisions for the ILB and direct attention to all learning space on the Henrietta campus.

Conclusion

This committee has fulfilled its charge by providing recommendations for room types, sizes, and quantities, and has described the relationship between formal and informal learning spaces for the ILB. Committee conversations related to the ILB learning space became a catalyst for a grander recommendation for a systematic approach to manage the quality and quantity of RIT’s formal and informal learning spaces across campus. In addition, the committee recognizes faculty training and research in active learning pedagogy as fundamental to RIT’s success.

Data analyzed by this committee found that students indicated an overwhelming preference for hands on learning at RIT. Similarly, the faculty/staff survey data revealed that inflexible, noisy, poorly lit, and poorly designed teaching spaces prevent effective teaching and learning- comments that resonate with survey data from access services. Similarly, we recommend that these spaces are flexible in design, operable on a 24/7 basis, and facilitate the social aspect of learning. Faculty training and research into the use of active learning spaces in the ILB is strongly recommended by this committee and should receive central attention.

Developing a more robust learning space strategy will provide the opportunity for additional research with stakeholders in specific room design types and features, with the view to identifying additional room types or suggested enhancements that might not have been covered by this committee’s initial review. Finally, the committee recommends that a select number of existing committee members be included in future planning exercises for the ILB.

References

1. Educause: Learning Space Rating System. <https://www.educause.edu/eli/initiatives/learning-space-rating-system>. Retrieved May 22, 2017.
2. SCALE-UP: Student-Centered Active Learning Environment with Upside-down Pedagogies. (2011). <http://scaleup.ncsu.edu>. Retrieved April 20, 2017.
3. McGill University. Principles and Standards for Designing Teaching and Learning Spaces. <http://www.mcgill.ca/tls/spaces/principles>. Retrieved May 22, 2017.

Appendices

A: Faculty Survey Findings

B: Student Survey Findings

C: Survey Findings and Room Attributes

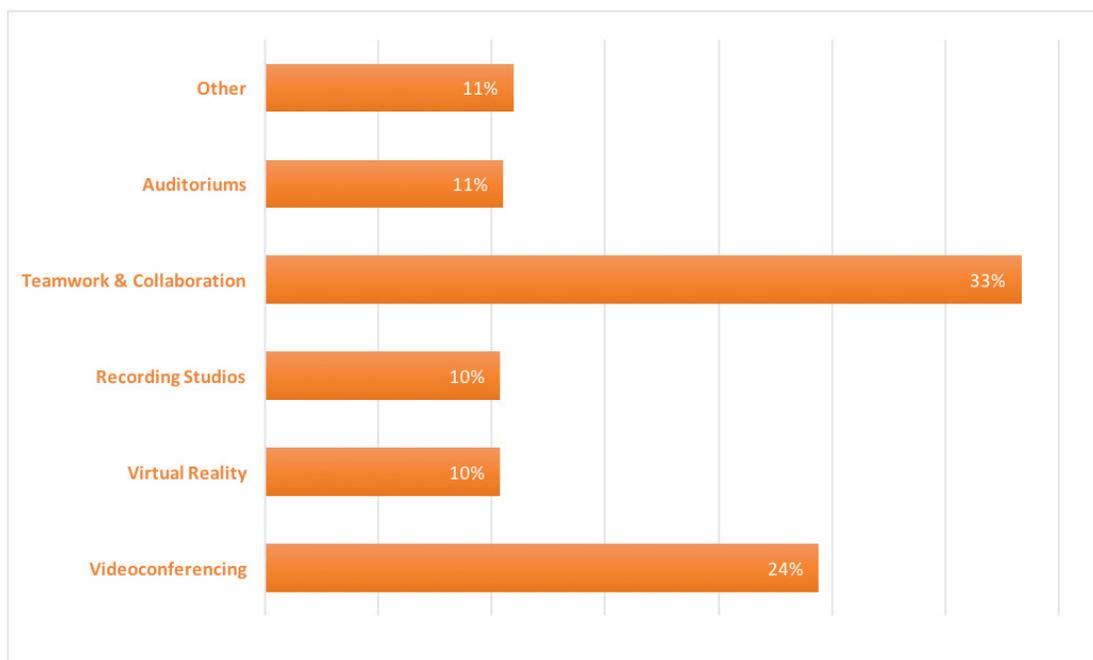
D: Teaching and Learning Services Learning Spaces Catalog

E: College Narratives and The Wallace Center Representative Statements

APPENDIX A: Faculty Survey Findings

Faculty were asked “What are you doing in your teaching that’s hard to do in your current classroom(s)? Why?” These responses revealed that the most common barriers to teaching are the features built into rooms (built affordances), the ways people are distributed within a space (proxemics), cohesive design, flexibility of furniture, room lighting and aesthetic view, comfort, and acoustics.

- 39% of faculty respondents cited built affordances (i.e. whiteboards, projection equipment, power outlets, etc.) as barriers to teaching. Specific features included the need for additional electrical outlets, whiteboards, and dry erase makers; a lack of table space for students to spread out their work and collaborate; outdated/broken/insufficient technology; and the inability for students to project their work to the class. Broken and/or uncomfortable furniture in the classroom was also a concern.
- 17% of faculty respondents cited proxemics (i.e. space configuration, desk space), including; classrooms that are too small for the number of students, rows being too narrow, inability for students to group together to work on projects, and the inability to provide adequate separation space for exams.
- 16% felt that rooms lack a cohesive design; elements and systems that do not work well together. These included podiums in awkward locations, as well as whiteboards and projectors that either don’t allow writing on projection, or projection that interferes with whiteboards.
- 15% noted either lighting, “ugly spaces,” comfort, or acoustics. Respondents characterized rooms as bleak, too hot/cold, too noisy/sound absorbing, lack natural light, and lack the ability to control the lighting. One notable specific user need is the ability for instructors to flicker the lights to call a room of Deaf students to attention.
- 13% observed that rooms lack the ability to be reconfigured, such as chairs that are bolted to the floor, fixed tables, or tables that are too large to move.

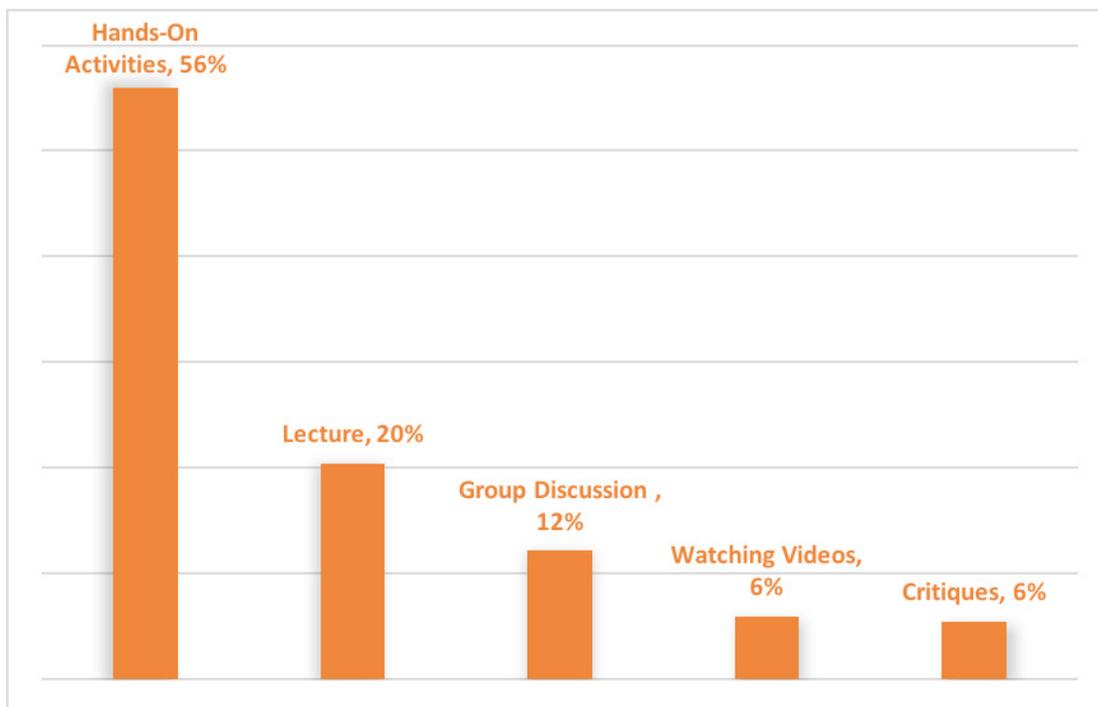


APPENDIX B: Student Survey Findings

Responses to the student survey, where they were asked: “What makes it hard to learn in your current classroom(s)? Why?”

- 26% of the students who responded to the survey indicated that proxemics (i.e. space configuration, desk space) was their greatest barrier to learning. Rooms are either too big or too small, and have a bad flow. Rooms with round tables and multiple smartboards make it difficult to see and follow without having to strain to look at the board.
- 20% cited noise and distractions as a barrier to their learning. Loud students and noises in the hallway, visual distractions from glass walled rooms, and other student’s computer screens being a few examples.
- 18% mentioned lighting, view and aesthetics as a significant factor, referencing sight lines to the instructor, as well as a lack of natural light and views to nature. “There are no windows, and the brick is depressing and sad.”
- 17% mentioned that the learning activity itself is a barrier to learning, not the room. Students may prefer more, or less, hands-on activities, more time to practice applications, and less group activities.
- 11% of the students surveyed felt that classrooms need better built-in features; additional whiteboard space and electrical outlets, better projection capabilities, and the ability to see a clock.
- 8% cited comfort as a key factor. They mentioned things like seating being uncomfortable and not ergonomically designed, specifically for left-handed users.

Student response to the teaching style/strategy that helps them learn best



APPENDIX C: Survey Findings and Room Attributes

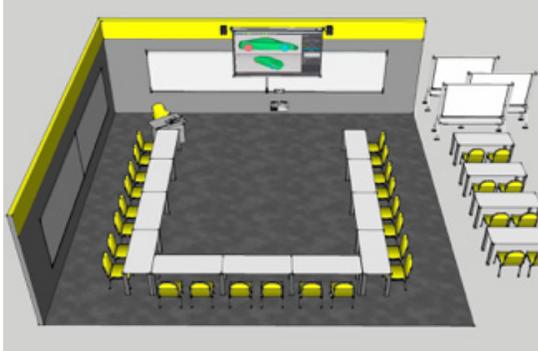
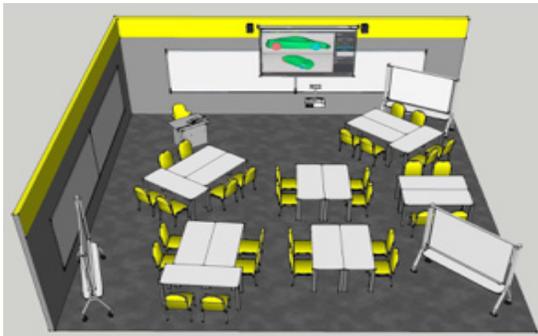
<https://www.educause.edu/eli/initiatives/learning-space-rating-system>

Feedback Item/ Recommendation	LSRS v2 Reference	Recommended Room Attribute	Apply to Room Type
Inflexibility (61)	LF 5.4: Furniture Configuration Flexibility LF 5.11 Physical Storage LF Credit 5.7: Movable Partitions	Chairs and tables on casters, available storage.	Flexible
Seating Density to High (52)	LF 5.3: Seating Density	Room should provide 30 square feet per person.	All
Faculty no access to students (25)	LF 5.2: Movement through Space	Floor plans for each room with movement considerations to meet learning activities.	All
Awkward space (30)	LF 5.1 Proximities within Space	Provide floor plan and furnishings plan with dimensions or other tangible evidence that room is designed to meet the criteria.	All
Bad whiteboard/projector positioning (35)	LF 5.10: Writable Surfaces LF Credit 5.7: Movable Partitions LF 5.3: Seating Density	Floor plans for rooms with sight line patterns.	All
Bad A/V (25)	TT 6.3 Visual Displays TT 6.5 Audio/Visual Interface and Control	Best practices from InfoComm on size, viewing angles, brightness of displays. Provide easy to use av interface with inputs consistent with user devices.	All
Bad sight lines (16)	EQ 4.3 Interior Visibility	Floor plans for rooms with sight line patterns.	All
Too small individual desks (13)	LF 5.5: Work Surfaces	Use tables in spaces with surface 30" wide x 24" deep.	All
Bad Acoustics (9)	EQ 4.6: Acoustic Quality LF 5.7: Movable Partitions	Meet ANSI/ASI guidelines, use partitions to block sound within room if doing group activities, provide uniform sound amplification where needed.	All
No tech that facilitates collaboration (9)	TT 6.6: Distributed Interactivity	Provide technology to allow students share digital content to multiple sites and locally with a group of team.	Group work
Bad temperature control (9)	EQ 4.5: Thermal Comfort	Comply with ANSI/ASHRAE Standard 55-2013, Thermal Environmental Conditions for Human Occupancy.	All
Classroom not designed for my discipline (9)	PDP 2.1: Stakeholder Engagement	Work to engage key stakeholders in design of new rooms, modifications, and renovations.	All
Bad lighting (12)	EQ 4.4 Lighting Control	Dimming lights with zones for activities, also ability to change hue, saturation and color where appropriate.	All
Old (8)	EQ 4.7: Environmental and Cultural Inclusiveness	Update paint, carpet, furnishings to go beyond off white walled box	All
Unattractive (7)	EQ 4.7: Environmental and Cultural Inclusiveness	Update paint, carpet, furnishings to go beyond off white walled box	All

Feedback Item/ Recommendation	LSRS v2 Reference	Recommended Room Attribute	Apply to Room Type
No natural light (7)	EQ 4.1 Daylight	Provide daylight when possible in designs	All
Uncomfortable (6)	LF 5.6: Seating Comfort	Seat comfort for all body types and consider ergonomics. Where possible provide multiple options.	All
Tables are too long (5)	LF 5.2: Movement through Space LF 5.4: Furniture Configuration Flexibility	Floor plans with table sizes correct size for space and easy for people to move.	Flexible
No A/V (5)	TT 6.3: Visual Displays TT 6.5: Audio/Visual Interface and Control	Best practices from InfoComm on size, viewing angles, brightness of displays. Provide easy to use av interface with inputs consistent with user devices.	All
No document cameras/ visualizers (5)	Section 6: Technology and Tools (TT)	Consider this as input to A/V system and should be part of AV system design	All

APPENDIX D: Teaching and Learning Services Learning Spaces Catalog

1. Flexible Learning Rooms



Purpose:

Rooms designed to support the greatest number of class-room activities.

Teaching Activities:

Lectures
 Whole cohort discussion
 Small group activities
 Three-step interviews
 Read and discuss (7)
 Small group activities
 Problem based learning
 Pair-share (6)
 Rank and Report (7)
 Whole class debates (6)
 Role-playing debates (6)
 Whole-class discussion

Specifications:

- Seating Density: 30 sq. ft. per person (LF 5.3, LF 5.2)
- Every student has easy access to a writable surface (LF 5.10)
- Tables are on casters and provide students with a work surface that is 30 inches wide and 24 inches deep (LF 5.5)
- Provide power in multiple locations to support students' electronic devices (TT 6.1)
- Chairs are on casters, height adjustable, and swivel (LF 5.6, LF 5.4)
- Faculty can lecture/present from a number of locations in the room and can 'dock' a digital device to share content on screen (LF 5.4)
- Movable partitions are available as writing surfaces and to divide workspaces for formal and informal learning (LF 5.7)
- Adjacent storage to keep furnishings when not in use (LF 5.11)

Additional Configuration Options

Large Flexible Lecture: Provide very large, flexible spaces that can be used for both formal and informal learning activities. With 4,680 square feet, these rooms will support up to 150 people and can be divided in half to create two rooms that support up to 75 people each. These room types will include additional ceiling height to accommodate large projection or multiple screen placement, and will include movable furniture.

Conference space: Provide articulating walls between two spaces to allow for scheduling beyond classes so that the space can be used to support conference type activities.

2. Group Work Rooms



Purpose:

Created to allow quick transition between lecture and group work. Provides students in groups the ability to work together as a team with ample work surface space, the ability to share digital content, and to work on whiteboards.

Teaching Activities:

Lectures/presentation
 Group digital collaboration (Image 1)
 Small group activities
 Problem based learning
 Pair-share (6)
 Rank and Report (7)

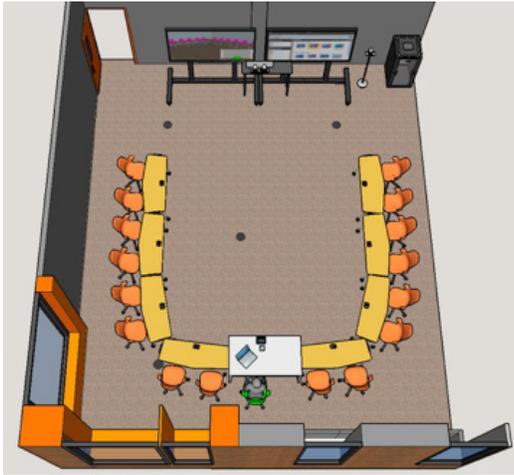
Specifications:

- Group worktables for 6-10 students
- Seating Density: 30 sq. ft. per person (LF 5.3, LF 5.2)
- Work surface for each student is 30 inches wide and 24 inches deep (LF 5.5)
- Digital displays to view lecture materials and share content from student devices are at each group table (TT 6.5, TT 6.6)
- Each group has easy access to a writable surface (LF 5.10)
- Tables remain in a fixed location
- Chairs are on casters, height adjustable, and swivel (LF 5.4, LF 5.6)
- Faculty can present from a centralized location or move easily between group worktables to facilitate learning (EQ 4.3, LF 5.2)
- Technology infrastructure in these rooms is more complicated to allow individual group worktables to share content, while still allowing for the room to be divided (TT 6.6)
- Movable partitions are available as writing surfaces and to divide workspaces for formal and informal learning (LF 5.7)

Additional Configuration Options

SCALE-UP (Image 1): These rooms can scale to support large class section size. At 4,680 square feet, these rooms support 150 students (or can be divided in half to create two 75 student rooms). SCALE-UP is a nationally-recognized design pattern that originally stood for “Student-Centered Activities for Large Enrollment Undergraduate Physics.” It has since been recast as “Student-Centered Active Learning Environment with Upside-down Pedagogies,” and has been adopted across disciplines.

3. Discussion (Global) Classrooms



Purpose:

Provide a classroom setting that promotes interactions between all the students in the class.

Teaching Activities:

Lecture/presentation
 Whole class debates (6)
 Role-playing debates (6)
 Whole-class discussion

Specifications:

- Seating Density: 30 sq. ft. per person (LF 5.3, LF 5.2)
- Tables are fixed in a horseshoe shape and provide students with a work surface that is 30 inches wide and 24 inches deep (LF 5.5)
- Provide power in multiple locations to support students' electronic devices (TT 6.1)
- Chairs are on casters, height adjustable, and swivel (LF 5.4, LF 5.6)
- Faculty can lecture/present from the front of the room or at a seated location within the horseshoe (EQ 4.3, LF 5.2)

Additional Configuration Options

Global: These rooms support video conferencing and/or web conferencing between campuses. In support of collaboration with other global classrooms, these 840 square foot rooms are designed with fixed furnishings in a horseshoe shape to support camera visibility for all participants. These rooms include additional technology that supports global connections and the ability for faculty to share content while supporting 25 learners locally and/or allowing for whole cohort discussions.

APPENDIX E: College Narratives and The Wallace Center Representative Statements

Report on Active Learning Discussions taking place in the College of Science - *Chris Collison*.

Chris Collison visited Schools of Physics and Astronomy (2/20), Chemistry & Materials Science (2/13), Life Sciences (2/13), and the Center for Imaging Science (2/16). Email feedback was also solicited. The feedback is summarized below.

According to COS Faculty, active learning is summarized to be: i) experiential and hands on, ii) guided but student-directed, iii) engaging work, which encourages critical thinking with open ended projects and iv) connected (to other students and to the instructor).

Before presenting considerations for how active learning could be accomplished, a critical recommendation came through from all faculty groups in COS: When multipurpose classrooms are centralized to meet the needs of the many, reclaim and renovation of satellite space dedicated to a primary discipline must be completed such that specialized faculty and staff can be coupled more effectively to school-specific active learning. In other words, each academic unit in the college of science has its own very specific set of instrumentation and laboratory experiences. It seems more prudent to better equip space for a specific discipline, once classroom space would be added in a centralized ILB. Many faculty state how it is impossible to decouple the practical side of experiential learning from the classroom, for active learning in the sciences.

Beyond this popular perspective, discussions as to how active learning could be accomplished in a new building can be summarized based on the 1) modular classroom, the available learning 2) technology and tools and the 3) furniture. The details of the discussion surrounding 4) discipline-specific satellite renovation is also provided below, with an idea to transition towards local repurposing as centralized classrooms are made available.

1. Modular/movable classroom

- Access services must be considered (Deaf, HoH, Blind, low vision, low mobility)
- Continuous access to a lab or room, to pick up where they left off, independent of a prescheduled class time
 - Dedicated space for “individualized” projects
 - “rentable” for projects
- Demonstration studios – watching from 360degrees through video (filming capability), with global interconnection
 - Large demonstration table, with overhead camera
 - Simulators take place of physical Demonstration
 - Virtual Reality Lab
 - Centralized instructor
- Acoustics optimized for the specific room/group size; Invest in a good microphone system
- Raised platform to elevate the presenter for improved visibility
- Studio can be resized, perhaps such that online sharing is available without audience
 - Break-out room, allowing students to seamlessly continue meeting small number of students after class
- Lab/Classroom hybrid
 - Hoods/sinks on outside, mobile lab space in center (options for ventilation important in sciences)
- Bringing students into groups of different sizes and membership (small and/or large)
 - Connecting students together to solve problems (think, “pair”, share)

- All computers connected to each other; each computer can be instantly connected to front screen
 - See “Tablets with image capture software” below
 - Observation deck
 - room can be set up as an exam facility
 - 1 way-window, eye-tracking, pedagogical research option
 - Science/Art collaborative space
 - Option of Faraday caged classrooms, so the students won’t be distracted by cell signals and wifi
2. Technology and tools
- Tactile tools and supplies
 - Technology Loan Cage
 - E.g. High quality video camera for external recording; encourages return to active learning space for a debrief on the field trip, or to share in virtual office hours
 - Instrumentation; discipline specific
 - wet-lab, microscopes, greenhouse, live animals, zoo
 - chemistry instrumentation
 - Specialized Physics Equipment, along with space for staging and storage
 - Storage space on perimeter
 - AI interface for students
 - students given feedback on problems in lieu of professor allowing the pace to depend on the progress of each student
 - Tablets with image capture software
 - Desks are tablets (problem since hardware becomes obsolete quickly)
 - Walls are tablets
 - Microscope image display at front
 - Document cameras
 - HDMI cables (or equivalent) at each desk
 - Screen can be moved vertically so that prior instructor annotations are retained
 - Large amount of “whiteboard” space or equivalent
 - Whiteboards act as screens for projected images. Minimize seams such that they do not impede
 - Smart boards with recording capabilities such that pen strokes on a projected image are captured for posting (as one). Audio would be necessary here as well.
 - Teleconferencing ability
 - A “friendly, inviting to the eye” environment for virtual office hours
 - Access to current journals
 - Projector must not block view
 - Lecture Capture Systems (e.g. Matterhorn recording systems as found in Center for Imaging Science), with student helper to set up and run them
3. Furniture
- Modular furniture (see modular classroom) or Pod chairs
 - Image capture walls and desks
 - Transparent walls (transparency or opaqueness changes)
 - Circular tables to allow varying team size with full engagement
 - All tables on wheels
 - Comfortable chairs/yoga mats

4. Discipline-specific satellite renovation

- Experiential learning space replaces classrooms locally to allow for more discipline specific active learning/lab space
- Multipurpose centralized classroom space will allow for dedicated discipline/sub-discipline space to be renovated within schools and colleges
- Repurpose and reclaim space already designated as “jack of all trades, master of none”
- Active learning space needs to be in the building where the faculty offices are; Students need access to faculty as a priority over access to space and so when active learning space is moved to a centralized location this may make access to faculty (after classroom hours) more remote
 - Must not decouple active learning from the faculty
 - Students are active learners outside of the classroom and this means they need to be close to their professors
- Active learning space needs to be close to he/she who is responsible for set-up and testing of specialized equipment (Physics and CIS both strongly supported this approach)
- Office space for students
 - Research space for students localized to their lab/school

Kate Gleason College of Engineering Faculty and Staff Feedback - *Risa Robinson*

KGCOE All College Meeting, February 13, 2017, 12-1:50, Xerox Auditorium

Collected by scribe during the meeting

- #1 priority: Sufficient classrooms to meet actual class sizes- these needs have been articulated multiple times
- Is this task force working in collaboration with Space committee? – task force has been told it will all come together
- It would be helpful to have alternative exam space – different approach to assessment – DSO has nice facility
- classrooms – to accommodate futuristic learning opportunities
- flexible spaces – with large groups – reconfigurable space depending on needs and size
- It is important to be able to move tables/chairs, but many classrooms have too many chairs packed in,
- MSD – lacking space for individual teams – team spaces
- space for developing active learning – faculty development/training – tunnels
- Important to consider how active learning affects curriculum
- Mission of building (ILB) is fuzzy-trying to be all things for everybody. If classrooms are the focus, stick with classrooms, not project space right next door – sharpen vision
- Good technology – built in computers, access account, smart boards, markers, etc.
- Not clear how this will help to enhance lab activities – would like to know more. Studio learning-active learning? Or other?
- By making classroom space available across RIT, might free up space in college for research labs
- What will the impact of this project be on student tuition? Not worth it if the impact is significant.
- Helpful to have technology to see what each student is working on (on individual computers)– monitor progress
- word of caution – Xerox envisioned as multicultural space – space built for translators, now used as storage. Big ticket items tap resources.
- Active learning requires tools – storage needed for tools – large scale items (pool tables)

- How many classrooms? Mon Sustainability building not being used as promised. This kind of project not worth it.
- Institute hall is a new building, but rooms do not comply with typical University standards. ASU has good document of University standards.
- Task force looking at Institute Hall – can share findings/progress
- An alternative might be to make space available in the new building for labs so classrooms don't have to move
- active learning in my classes - small group work – walls
- Many classrooms have too many chairs packed in. Makes it impossible to walk around classrooms to talk with individual students
- New building - Central location for classes – keep active learning close to the college. Is the plan for this to be a showplace? or practical design?
- Active could be learning could be problem solving or building stuff – keep 'hands on stuff' here in college – keep loud messy stuff in college. Spaces should be reconfigurable for better use of space. We are currently booking space for 30, when we only need 15.
- active learning could look very different across disciplines. Showplace could be for examples of work happening – but keep active learning in colleges. Keep concept of active learning robust – not watered down for broad view of what this means
- How will our feedback be relayed to administration? We need lecture rooms. Will they listen or have they already decided?
- Lecture space not appealing to donors – this is a given, but innovative teaching and learning is exciting – showplace. Part of bigger picture for RIT
- The space (between Wallace and SAU) is central and perfect for multipurpose classroom space
- rule of thumb – New building should have seating for 1500 – 2000 students at a given time
- only 50 % of faculty are using MyCourses – needs to be a push for buy in/use of technology.
- Retractable roof – for nice days.

Collected via email after the meeting

EMAIL 1: Robert Garrick (and others) have a very cool classroom in CAST that they use to teach fluids (and others?). It has some technology so that small groups can work together, but then get pulled back in for whole class discussions. I don't know much more about this, but hope that the committee can look into this space as an example of something that already exists on campus.

EMAIL 2: I have to apologize up front – this is a long email. But some of the discussion today seemed at odds with what you were asking for, and I would hate to see an opportunity like this pass us by. First, thanks for trying to collect all this information – I think this building has the potential to be a huge benefit to our students.

Second, from what I heard in the discussion, there is not a common understanding of what active learning means across the college, and until there is a common understanding you're not going to get feedback that's going to help you represent KGCOE's voice on this task force. We were probably halfway through the discussion before anyone answered any of the three questions you posed (and I'm as guilty as anyone else of that), and the definition of active learning was the most important of all.

Comments indicated that people may think active learning means:

- Lab/fabrication activities
- Computer work/high-tech collaboration tools
- Collaborative work with low-tech tools (e.g. group work on whiteboards)

- One on one time with an instructor
- Problem solving in class

I think it would be helpful to have people submit the active learning activities that they use in their classes, and derive a college-wide definition from that.

I also heard comments that indicate that people are making a distinction between a classroom and active learning space. Some people seemed to equate “classroom” with “lecture hall” and “active learning” with “laboratory”. My understanding of this task force is that you’re putting together a proposal for classroom space that facilitates active learning. That ASU document that Santosh mentioned looks like a great benchmark, and explicitly defines some of these space labels. I assume this is what she was talking about: https://www.asu.edu/fm/documents/project_guidelines/Classroom-Design-Guidelines.pdf

Also, from what I’ve seen in other colleges, their classes include active learning in ways that are sometimes extremely similar to our students’ active learning classes. The new Business Analytics Lab & Active Learning Collaboratory in SCB has a lot in common with what’s in GLE-2271, which has a lot in common with what’s in the Software Engineering student project rooms. A classroom building designed to support active learning can be useful to many people on campus including engineering. I think it would be detrimental to the college’s cause to try to convince people that we’re special and have different needs than everyone else.

Third, my own two cents as far as specific active learning environments to include:

- Classroom space that’s reconfigurable from large to small, on the order of 100’s to 10’s of students. Along the lines of what’s in Institute Hall or Slaughter. Whiteboards on all the walls.
- Academic team meeting rooms (they have examples in Software engineering) where students can have quiet meeting space and/or conduct teleconferences – sounds like that’s already in the works, and it could be useful for more than just international campuses. The label is kind of unfortunate, and I would suggest calling them something other than international collaboration rooms (or whatever the words were). On the order of <10 students.
- Auditorium-style lecture hall that can seat 300-400 students. This only makes sense if it would be in use all week, since it would have a large footprint. But I’m guessing I’m not the only one with a really big class that has to get divided into multiple sections due to space constraints.
- Extracurricular team work spaces. If they want a donor showcase, make the entire first floor of the building be a mechanical and electrical shop surrounded by team rooms for Formula, Baja, Hot Wheels, EVT, Aero Club, Clean Snowmobile, SPEX, Multidisciplinary Robotics, etc. The clubs are still active learning, it’s just happening outside a classroom, and many of these clubs include students from different colleges working together. It would also get the teams out of spaces that are better used for academic purposes – and yes, I admit that I’m pretty biased here.

EMAIL 3: I occasionally keep a record of some of the responses I give to surveys. Below is my answer to one of the questions.

I didn’t know how this survey will be processed, so I chose to write the relevant paragraph in upper case.

I’d like to add that during our college meeting, Dr.’s Hensel, Kandlikar, Kempfski, and Pearson, who are well respected in the College and Institute, have expressed similar opinions.

1. Videoconferencing facilities exist already. And the bluejeans service works reasonably well. I wouldn’t invest in these.

2. Virtual reality: maybe for a handful of labs, but otherwise I don't see this becoming a serious teaching tool. 3D visualization accomplishes much more than this. Invest in better computers in each department or lecture room.
3. Recording studios: Probably for the music department.
4. Wide open spaces are useless. Rooms with different capacities, i.e. that can hold 10, 15, or 20 students are needed. Open working spaces may be useful to impress visitors, but not to perform real work and/or accomplish a real task.
5. Again, theatrical viewing and movie projection I leave to the arts and music departments.
6. Auditoriums for the large classes we have to teach today - YES!

IT APPEARS THAT THE ADMINISTRATION INTENDS TO INVEST IN A BUILDING DESTINED FOR "EXPERIENTIAL LEARNING". THE LATTER MEANS DIFFERENT THINGS TO DIFFERENT INDIVIDUALS AND DISCIPLINES. I THEREFORE VENTURE TO AFFIRM THAT THE SPACE IN THIS BUILDING WILL NOT SERVE ANY ONE DISCIPLINE OR DEPARTMENT WELL.

PLEASE BUILD 4-6 FLOORS WITH LECTURE ROOMS OF DIFFERENT SIZES (20, 40, 60, 80, 100, 120). THIS WILL FREEUP SPACE IN EACH DEPARTMENT, I.E. THE OLD SMALLER LECTURE ROOMS WILL BE ABLE TO BE CONVERTED INTO ADDITIONAL LABS AND SPACE FOR PROJECT BASED ACTIVITIES. ULTIMATELY, THE EQUIPMENT TO PERFORM SUCH WORK IS READILY AVAILABLE IN EACH DEPARTMENT AND CANNOT BE HAULED TO AN "EXPERIENTIAL LEARNING" BUILDING EVERY OTHER DAY.

THE LECTURE ROOM BUILDING MAY NOT SOUND GLAMOROUS, BUT IT IS THE ONLY ONE THAT MAKES SENSE TO INVEST IN. AND I'M SURE THAT VISITORS WILL BE INTERESTED TO SEE WHAT IS GOING ON IN A PARTICULAR ACADEMIC UNIT, RATHER THEN IN A FEW ROOMS IN WHICH EVERYONE CLAIMS TO BE DOING EVERYTHING.

College of Liberal Arts College-Specific Survey Results

March 6th 2017

Q1 - What is your understanding of (or how would you define) "active learning" as it relates to your discipline and your own teaching?

Having the opportunity to engage with primary and secondary sources and to use those sources to make products, including those aimed at a public audience

Can include internalizing information, evaluating material, applying concepts, generating original ideas and research.

Active learning is when the student takes primary responsibility for learning.

Active problem-solving, meaning that students may need to engage in critical thinking to (re) define the problem, determine the kinds of information needed to solve the problem, and then search and review materials relevant to the problem. Or, put in another way, what active learning is NOT: Students are NOT given well-defined problems (e.g., multiple-choice exams or step-by-step procedures to follow), they are NOT told where to find relevant material, or NOT told how to go about searching relevant materials, and they are NOT given standards to which compare their solutions (e.g., answer templates).

An active learner - German learner in my case - knows which resources outside the classroom help him/her most and uses them regularly (websites, magazines, meetup groups, study groups,

posters, apps, learning diary, pictures, index cards, radio, TV, e-books etc)

Now and in the past, and not merely as a matter of fad, philosophy aims to develop reflective classroom engagement through broad discussion among students and between students and the professor. We might use thought experiments, data, film, or texts (certainly, texts) to instigate discussion, but the focus is on the exchange of thoughts.

It is studying or researching outside of classroom, using knowledge, information, or strategy a student learned from class or other resources.

Active learning is experiential, not merely being talked at by a faculty member

Active learning in my discipline involves learning to speak/write another language by speaking/writing it. The use of a lab with computers equipped to allow for these activities is essential in this process.

One aspect of active learning in my field is being able to have space for students to create and hang an exhibition. This would require a workshop as well as a gallery. Students have also created short scenes relevant to exhibitions.

Hands on learning; project-based learning; learning in teams; collaboration across disciplines; sharing ideas and data in real-time; testing and simulating decisions and tweaking those decisions in a simulated environment to see what happens; trying and failing and then trying again slightly differently. Active learning is “doing” -- it is the difference between reading about how to play golf and getting out on a golf course and practicing. (I can assure you, the former can only lower your score so much.) In a RIT context, we need space that allows students to play, practice, try, fail, and try again.

Active learning is rooted in constructionist learning theory requires the students to engage in problem solving tasks in order to achieve some stated goal. Active learning activities ask students to put their knowledge or understanding of some concept or content into practice, and often requires them to work in teams in group projects.

Where students participate in the delivery of content, as opposed to just receiving content from a text, lecture, or other means.

Students engaging each other in conversation and discussion.

A situation where students contribute to their own learning by using guided exercises and assignments to discover for themselves and, in some circumstances, help others learn too.

That means the student attempt to complete an assignment by doing something.

Requires music performance, and facilities for studying music through listening to audio recordings and watching videos.

In language acquisition - but not only, an interactive learning relationship in which communicative approach and content based instruction is central.

Q2 - How have you used active learning (however you personally define it) in your pedagogy – please provide examples.

How have you used active learning (however you personally define it) in you...

Having students research and write new Wikipedia entries, or substantially improve existing ones

Having students conduct oral history interviews and make podcasts using clips from them

Asking students to apply content from assigned readings to solve other problems

formulate their own code of ethics, having studied many examples of other professional codes of ethics Having students research a topic, create an original argument and support it with evidence Students curate an exhibit, whether web-based or physical Students teach other people the content they have learned in the course

Weekly reading responses, research projects, original exhibition designs.

I have used a decision-centered format where students are responsible for learning the basics of the material, then for applying these concepts in class to solve problems.

By open-ended problems that students need to define or frame in a way that facilitates solving them, asking students to justify everything they do (i.e., explain why they are doing what they are doing, and how they think what they are doing will move them closer to the solution), and explain whether the answer they come up with is true, and if so, how do they know it is (or is not), or, if the problem is an applied one, whether their solution works, and how would they know if it does, or does not.

I encourage my students to write in a learning diary and to study in groups.

By guiding discussion and by equipping students to guide discussion themselves

Give students a project of making their own skit script, using the target language instead of using English.

Yes, I have my students work on collaborative projects in class and outside of class; they give feedback and share ideas in class in a meaningful way. The traditional classroom space with small desks that are movable, but not conducive to holding laptops and work stuff, prevents the students from having the best collaborative experience. I also try to break up the experience in the classroom to meet the needs of lots of learners — i.e., some who like hands-on, others who like peer-to-peer, others who are more focused and better 1:1.

I model correct use and move the students from short drill exercises to longer question/response patterns to interactive partnered exercises to critical thinking in the target language.

See above. Students have made mock-ups of exhibitions and have worked alongside faculty as they install exhibitions. Students also have developed ancillary events and exhibits.

Yes. I run team-based simulations. Students get a problem; work on that problem; propose a solution; construct that solution either in a computer simulation; and see how their decisions play out.

Yes. Most of the work I do in writing classes requires students to collaboratively create interactive stories.

Discussion forums.

My courses are heavily discussion-based.

I have, but not frequently - mostly due to lack of time to prepare properly and uncertainty about what will work and what won't work (i.e. lack of time/willingness to experiment) One example of something that did work: In a social media class I had students interview some of the world's top-ranked bloggers about the value of blogging for an organization and then share their findings in group discussion.

Yes. In-class presentations, group projects, media production assignments.

RIT does not have such facilities, or they are inadequate.

Both on line and in presence shared co-curricular building through activities geared to the interaction of learners such as dialogical exchanges, skits preparations, presentation modality as well as both informal and formal writing in the target language.

Q3 - What types of spaces are needed to promote your engagement in active learning pedagogy? Please list any types of technology or spaces that would be useful to you to encourage doing/acting, and getting students to think about the things they are doing, in the classroom.

What types of spaces are needed to promote your engagement in active learn...

An exhibition space for both faculty and student-designed exhibits A digital humanities and social sciences/museum studies lab that would have advanced computing technology and knowledgeable staff -- would include but not limited to 3D printing, scientific visualization, gaming, AR, VR, preservation quality scanners, etc A recording studio (could double as a location for Skype and other video conferencing)

Exhibition space for students to apply museum studies concepts and develop original exhibitions.

The needs are simple, but rare: Movable chairs and small whiteboards.

Collaborative spaces that facilitate problem-solving in small (2-5) to medium-sized (up to 10) groups, ways to share reasoning and findings with all group members (white boards, places to put post-it-notes and rearrange them, electronic whiteboards with hypertext capability), capability to easily incorporate notes and plans into more formal documents, including final reports.

I'd like to decorate the walls of my classroom with German (self made) posters. An easily accessible TV or computer with German channels only (Deutsche Welle, News in slowly spoken German etc) would also be helpful.

Chairs or tables that move. However, desks are not as good as tables, and I recently had to spend a lot of time and many emails trying to find a room where we could use some props to demonstrate inductive and abductive logic because my classroom did not have tables that move. I considered using the library that day but did not know of a space there, either.

computer

1-tables and chairs as workspaces, not small desks 2-multiple projector views, like in A-400?, so that two students can project at once 3-walls of white boards, like in Building 86 to promote long list making 4-white boards that are not hidden behind the projector screen; when I use the projector I can't also use the white board because there's only about 20 inches of space to write. 5-incorporate design thinking into the design of the workspaces/classrooms. What we generally offer in the classroom is not like the actual spaces where work gets done. Why is that? There is a disconnect between perceptions of what works and what actually works.

A language / computer lab equipped with the software to assist in this process at all levels.

A prep room with large dry spaces to work on layouts, a place for a camera set-up, cork or soft-walled partitions to hang things, a computer, and a gallery space with some cases (floor standing and wall mounted), room enough for free-standing pedestals, good lighting (and no windows). It would also be nice to have a large room where furniture could all be moved or removed.

Space for group discussion and collaboration; space for experimenting; space for performance - whether speeches or music or other (open mic events are a great opportunity for "active learning" where you can see if your material works or not; high quality computing and displays with simulation capacity.

Modular, reconfigurable furniture and space to spread out are the two key elements. Classrooms with fixed seating create a real obstacle for active learning. One (or ideally more) digital projectors and whiteboards are also key for sharing ideas.

All of my courses are taught in the online format. I need no space.

For me, technology is a bit of a distraction. (If students are on-line or on computers during class then that means they aren't engaged with each other.) I need seminar and discussion space.

I would love to see a space where students can charge their devices and get a coffee for free in return for completing small learning tasks that help me refine active learning techniques. In other words they do the exercise to get 30 minutes of charging and a free coffee and I get to try out things on willing participants (but not in the classroom)

A modular system where tables or desks can be configured for working alone or in groups. Computers would be a plus, but a smart board would be ideal.

Performance spaces, audio/video lab.

Flexible classroom space with mobile chairs, boards with the opportunity to have access to tablets and interactive whiteboards.

NTID Focus Group Summary of Discussion

I have organized the discussion results into the common threads below. Also, note that there were plenty of comments about accessibility that would go along with the design phase of the rooms (and I have some names of a couple Deaf colleagues that I think would be great to involve when things got to that stage)."

Create spaces that encourage collaboration

- Make the space conducive to learning communities (like furniture that can be grouped for various sized groups).
- The room need not have a "front"/central teaching point (rather have multiple areas from which teaching can occur). Allow for the instructor to move about in the classroom.
- Make the furniture in the space very flexible/moveable.
- Make the room large enough to facilitate the easy movement of furniture into different configurations.
- Have "modular" capabilities so that the room can be set-up in different ways and for different purposes.
- Have moveable chairs, tables, and whiteboards/monitors (the latter can be used as dividers).
- Have lots of projectable space (many walls on which projections can be made- like in the MAGIC Center).
- If the room is going to be used by multiple groups, including student groups in the evenings, make sure that it has sensors to automatically turn of lights etc.

Make sure the room is comfortable and has good visibility

- Good light, natural light, but ability to make it dark for projecting
- Keep it clean/simple (not a lot of obstructions)
- Preventing the room from feeling crowded can make it more inviting to students.
- Make sure it has ample connectivity/plugs with plenty of bandwidth (students tend to stick around longer in the classroom)
- Have plenty of whiteboards close-by (less "risk" than going in front of the classroom to participate)...allow students to write thoughts down as they are thinking through problems.

Whiteboards could go around the perimeter of the entire room.

Miscellaneous

- Have a ceiling-mounted camera for recording class (if desired) for later dissemination.
- Have teleconferencing capabilities

School of Individualized Study Summary of Discussion

Create a space where RIT classes can interact with RIT administration to solve real problems for the university as part of the class.

Space for online students to meet

I've tried many of the collaborative rooms at the university and have not yet found one that fully meets the needs of my project based classes (Wicked Problems and Engineering and the Developing World). The best one I've had was the Steelcase room in building 1, but I don't seem to be able to request it anymore??? Right now I am teaching in the new collaboration room in the college of business, but the furniture doesn't lend itself to moving into a discussion circle—a big drawback to developing a classroom community.

Here's what I'm looking for:

Easy to transition between discussion (ideally in a circle) to group work. That means there can't be so much furniture in the room that it is hard to move things (like in Steelcase under the library—so many chairs!!!).

White boards for group collaboration—cover all the walls if possible! Big white boards are better for the systems mapping that we do in class.

Large whiteboard with slide projection at one part of the room. (the rooms in GIS where the whole front wall is a whiteboard are great for this. I like that you can project something and then write on it during discussion. The front board in the Steelcase room under the library (WAL-A400) is terribly small and no one could see the slides!

I don't need the high tech capabilities in a room as much as the collaborative capabilities... Basic AV hook up to computer with sound for me. The room in the college of business had technical capabilities beyond what I need. I will see if the students end up using the shared screens as we get into our group projects. I'm not sure yet.

Here's a reach goal: We need space (cubicles, work benches) for student groups who are working on projects to keep their stuff set up—a place to immerse themselves in their project plans, concepts, and vision. In engineering senior design we have some cubicles, for example, but we have way more teams than we have spaces. Other kinds of teams could benefit from such spaces, including student groups... Olin University may provide good examples of how to provide project space.

First, some spaces with white board walls where groups could really use the large wall surface to collaborate on ideas. Second, maybe some booth style seating areas - while it's nice to have mobile furniture, sometimes it's just as nice to have comfortable furniture where groups can sit together and feel like it's "just them". I've seen these done at other schools in libraries and other spaces and often times they'll add a wall mount monitor that can be hooked up to a laptop, seats about 6 people. Also, maybe some larger computer monitors that people could hook up for group project work or collaboration as needed, accompanied by movable furniture. Finally, maybe some small presentation practice areas with either projector and screen or large wall monitor - I envision these as sort of narrow halls that might only seat 10 people and the presenter - students have to give presentations a lot (for class, conference, shark tank, or whatever), but there are never many spaces to practice.

Nothing new or crazy on the way of ideas but the biggest thing for me when I teach is not having the newest or best technology, white boards and a projector are usually sufficient. What is more important is the ease of being able to reconfigure the space, movable desks/tables that can be organized in multiple ways to facilitate both discussion and group learning activities. Oh, and interior glass walls are terrible things. No one wants to be in a fishbowl.

Student Affairs Summary of Discussion

- As far as design features we did not have major things to add. Items likely to occur in our survey responses are:
- Movable furniture to facilitate interaction while in class (required of language learning)
- Classrooms and/or practice space with AV recording equipment so that students can revise and improve on speaking projects. (Not necessarily the same as ‘recording studio’ for making finished products)
- (Classroom recordings can also be used for faculty peer observation experiences and other types of mentoring.)
- Ability to easily interact with displayed materials and class discussion at the same time. For instance: writing on board and projection at the same time. Or practical and useful software for electronically marking up displays in real time that is supported across campus.

Thanks for the opportunity to explore this - exciting this is on the calendar. The common themes I saw in the literature were collaboration, 3rd space, navigating both the need for digital and paper information.

Of course, everyone needs more classroom space: I’m wondering if there might be room for a collaboratory (seems like a similar concept with the Center for Student Innovation) – would be great to have a space where we could host labs, secure our materials (perhaps in a few closets), but still have space for students to collaborate and work together at different hours. I know SI and our academic success courses could keep a few rooms occupied for some significant blocks of time each week. Would be great to create open lab times that encourage faculty to use the space for office hours and perhaps tutoring (that model may work better in more college-specific space, but this could be an opportunity for the interdisciplinary courses/faculty.)

I think a challenge is creating privacy nooks – we have so many folks working on campus who need a private and quiet space to meet with students for coaching (Empower, Spectrum Support, YearOne). I can see those nooks as being very popular for students – how might we prioritize them during ‘office hours’ to allow quality, private time?

Smith College has wrapped up their vision and planning stages – I enjoyed looking through the planning process (See slide 11). There are also great links to articles about the future of libraries at the end of the intro page here (listed below). You could spend a few days digging through everything they’ve shared on the Transformation sites.

- Connecting Higher Ed Trends to the Academic Library | From the Bell Tower, Stephen Bell, Library Journal, April 23, 2015
- Designing A New Academic Library From Scratch, Nancy Fried Foster, Ithaca S+R, February 14, 2014
- Do We Need Libraries? Steve Denning, Forbes, April 28, 2015
- How do you design the library of the future? Medium, March 19, 2015
- In the Wrong Business: A New Theory of Academic Libraries, Christine Madsen, May 25, 2010

- Library as place: rethinking roles, rethinking space, Council on Library and Information Resources, Washington, DC, February 2005
- The library, the city, and infinite possibilities: Ryerson University's Student Learning Centre Project, Madeleine Lefebvre, IFLA Journal, 2014
- The living library : an intellectual ecosystem, Patricia Steele, David Cronrath, Sandra Parsons Vicchio, and Nancy Fried Foster, Chicago : Association of College and Research Libraries, a division of the American Library Association, 2015

My contributions/wish list are –

- Process for feedback in design (Smith College)
- Provide infrastructure for learning - collaborative, flexible space (universal design) which can also permit secure storage for learning tools (Instructor materials, i.e. VR equipment)
- More space for one on one meetings with students and mentors/professionals

TWC Rationale for Special Collections Classroom

Active Learning with Special Collections

From ancient cuneiform tablets to modern pieces of art, active learning takes a hands-on, archival approach in the Wallace Center's two special collections departments. The RIT Archive Collections houses a rich collection of materials that document the history of RIT from 1829 to present, as well as the RIT/NTID Deaf Studies Archive. The Cary Graphic Arts Collection is one of the world's premier libraries on graphic communication history and practices. Archivists and curators in these two libraries engage about 1,600 students a year with class sessions that feature interactive learning with primary resources. Sharing these rare and unique artifacts usually requires special handling, whether due to fragility, physical makeup, or size.

Currently both the Cary Collection and RIT Archive Collections use their reading rooms as classrooms. This is not ideal. Existing tables and seating do not adequately meet the challenges of teaching with archival material. Moreover, these spaces comfortably accommodate only a limited number of students (Cary Collection: 20; RIT Archive Collections: 15) and reading room services are interrupted while these classes are in session. A cutting-edge classroom designed specifically for teaching with artifacts from special collections is needed. If successful, this classroom could be a model for other special collection libraries.

Square footage needed: 1000-1200 sq ft.

Number of people accommodated: 30 students plus instructors and interpreters

Construction and equipment required:

- Projector/screen and teaching station
- Document camera for projecting 3D objects
- Poster rails and magnetic walls
- Light table
- Modular and moveable tables to create large surfaces to accommodate oversize objects
- Attention to standard lighting (color & brightness)
- Ample outlets for connectivity of devices
- Security: lockable door/swipe access

Inspirations:

- Stanford University's Peter Wallenberg Learning Theater, Room 124, <https://wallenberg.stanford.edu/resources/pwlt.html>

- iFLEX Classrooms at University of Illinois, Huff Hall Room 209, <https://iflex.illinois.edu/2016/06/01/huff-hall-209/>

Letters of Support:

Letter 1

Dear Steve:

I enthusiastically support the creation of a Special Collections Classroom in the planned Innovative Learning Commons extension of the Wallace Center. As you know, I have been a regular visitor with my classes to the Cary Collection and RIT Archives over the years. (I am preparing to bring another class of 20 students over to learn about poster art from Kari Horowicz this very afternoon.) We have had many wonderful sessions over the years with Kari, Amelia Fontanel, and you in the Cary Collection from reading room or out in the library proper. For classes larger than around ten students, we are clearly in need of bigger spaces with better audio-visual capabilities.

Our visits to the Wallace Center are often the catalyst for inspiration for student projects, and our students always comment on the high value of their experiences in the RIT Special Collections. A new classroom facility will greatly enhance these experiences, and I encourage RIT to make the necessary investment.

Sincerely,

Frank

Frank Cost
James E. McGhee Professor
Chair, BFA Visual Media
School of Photographic Arts & Sciences
College of Imaging Arts & Sciences
Rochester Institute of Technology
<https://cias.rit.edu/faculty-staff/2>

Letter 2

Hi Steven

I completely support a classroom in the new addition in which students can look at our precious, unique, and educational collections. My field trips to the various collections in Wallace Center are wildly popular with students, and the information obtained is a fantastic addition to our students' education.

Thanks

Lorrie Frear

Associate Professor, Graphic Design

Letter 3

To Whom It May Concern:

Dr. Steven Galbraith has brought to my attention the plan for constructing a classroom building adjacent to Wallace Library.

He also has shared with me his proposal page titled "Active Learning with Special Collections."

The prospect of the proposed “Innovative Learning Commons-Special Collections Classroom” could be a very exciting and important added dimension to this new facility.

Having been an RIT faculty member for 53 years and with many of these years devoted to teaching history of graphic design, this new well-equipped space would tremendously enhance the use of the existing resources. The Cary Graphic Arts Collection and the Cary Graphic Design Archive are very special resources which support my teaching. Up to the present the use of these artifacts have been limited by not having a proper classroom for lectures, critiques and presentations. These archival teaching collections are very special to me as I have devoted over 30+ years bringing the majority of them to RIT. We have the repository of the majority of the pioneering Modernist American generation of graphic designers. Graphic design students at RIT have, in their educational experiences, a unique opportunity of learning from direct contact with these original source materials. To my knowledge, very few if any other design schools have such learning resources. These collections need a proper classroom/facility in which faculty can present the artifacts in a optimal instructional manner.

A new track in the Graduate Visual Communications Design (VCD) called DESIGN STUDIES has recently been approved by CIAS. This program will rely very heavily on Cary resources. Having this proposed classroom will be an important asset to the functioning of this new program option.

Therefore I am pleased to support Dr. Galbraith’s proposal.

Sincerely,

R. Roger Remington AGI M.Sc. NYADC
Vignelli Distinguished Professor of Design
Director, Vignelli Center for Design Studies
Rochester Institute of Technology

Letter 4

Dear Steve,

I am strongly in support of your classroom proposal. As a professor who encourages students to use special collections and who has regularly brought classes to the Cary Collection and the RIT archives, I would be particularly excited to have a classroom available that is suited to the use of artifacts, rare books, and archival materials. You have always been as accommodating as possible in the space you do have, but it would be wonderful to be able to project shareable information, as well as to have enough room to accommodate a full class without fear of putting materials at risk and without disturbing regular patrons.

I currently use special collections in relation to three courses (Illuminated Manuscripts, Modern Architecture, and The Gothic Revival), and am always on the lookout for more opportunities to incorporate your holdings into my teaching. In each of these courses, access is crucial for understanding issues such as color, scale, texture, weight, and conservation status of artifacts typical of our period or theme of study. This experience helps move students from the theoretical to the tangible: they are seeing, and in some cases handling, real objects that make up our shared material culture, and their learning and analysis means that students are making a contribution to art history, not just working in the abstract. Students are excited to be doing something real, something that professionals do; they take pride in RIT’s role as a caretaker for these artifacts; they are deeply engaged by hands-on experiences, resulting in improved performance. Students really anticipate our visits, and the experiences resonate through the remaining class meetings in expanded discussion

and participation. How wonderful to be able to experience the collections not just as a treat, but as a regular part of class! I know my colleagues in art history, design, film, photography, visual culture, history, and museum studies would appreciate this new space as well.

Best wishes –

Sarah Thompson

Letter 5

Dear Steve,

I would like to express my full and unqualified support of the creation of a special collections classroom to facilitate active learning with the collections from the RIT Archives and the Cary Graphic Arts Collection. I am one of the faculty who regularly brings classes to both of those collections and can attest that the limitations of space hampers the quality of the learning experience for the students. Both collections are critical to the education of the Museum Studies students and it would be terrific to have facilities that would highlight them. This is something that is long overdue. Students are amazed to learn what we have in the RIT collections, and having a facility that would showcase them and allow students to be able to view them more easily, see more of them, and possibly have ancillary materials available digitally, would make their experience even more memorable.

One additional item I'd suggest (although this may be implicit in the term "teaching station") is a smart podium from which speakers can easily plug in a laptop. That is, of course, if the plans don't already include a computer that's permanently affixed to the teaching station.

If there is anything I can do to encourage the creation of this classroom, please don't hesitate to ask.

Best,

Tina

Tina Lent, Ph.D.
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Letter 6

To Whom It May Concern:

Over the years, I and my students have had the pleasure of visiting the Cary Graphic Arts Collection to engage in active learning through artifacts. Although some find history to be somewhat dry and even lifeless, the subject comes alive when one is presented with an object crafted by someone long ago that tells an interesting story. Steve Galbraith and his associate, Amelia Hugill-Fontanel, have been more than willing and capable of bringing subjects to life with their selection and display of historical artifacts in the reading room of the Cary. The stories that the objects and their curators tell engage

students' imaginations and inspire them to pursue scholarly research. A number of our graduate student papers have been motivated and generated by our visit to the collection. For students, it has been an unforeseen pleasure—that is, until they actually see what they are studying. Students are increasingly visual in their learning styles and appreciate the opportunity to learn beyond just the texts of history. The Cary has been a welcome addition to the solitary reading and in-class discussion that often characterizes traditional learning.

As tasteful and comfortable as the reading room of the Cary is, the space is limited to about 20 students, and the number of artifacts on display is limited by the size of the table. Given that our undergraduate courses typically enroll around 30 students, the space cannot effectively accommodate everyone. Furthermore, the presentations are limited to “show and tell” stories presented by Steve and Amelia. Not all students have clear views and taking notes is difficult. Although we appreciate the simple and compelling stories our curators and artifacts tell, our experience could benefit from a more technologically-enhanced presentation. The proposal for a new classroom equipped with some up-to-date conveniences would effectively address the current limitations to active learning.

I am strongly in favor of creating a classroom designed for active learning—especially if that space can be as aesthetically pleasing and inviting as the Cary. There's something about comfortable surroundings that enhances the learning experience and brings out the best in our students. I would like to think of the new classroom as a modern scriptorium. I believe there can be no better use for the new space.

Sincerely,

Dr. Rudy Pugliese
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Personal Comments and Suggestions from Bruce Austin

“The expansion of The Wallace Center affords virtually unparalleled opportunities for active learning that transcend the teacher-student-classroom context. An expanded Wallace Center offers conveniently located options to embrace active learners and learning on campus in ways previously un- (or under-) available.

Suggestions:

- The first and second floors could host high-visibility centers for the preparation, practice, and performance of innovation and discovery, to become a beacon for organizing, preparing and distributing knowledge, and sharing viewpoints about discoveries.
- The main (ground) could serve as a multi-functional auditorium, suitable for presentations of every type: scholarly talks, panel discussions, demonstrations, and performances, with exhibition cases that billboard artifacts, achievements and collections held by RIT and its constituents to further embellish the space.
- The second floor could house space for assisting, tutoring, practicing, and receiving feedback on

the various ways discovery can be disseminated. For instance:

- An expansion of the current writing center to embrace undergraduate and graduate students.
- An expressive communication center where instruction and guidance in oral and visual communication is offered for individual and group presentations in mediated and non-mediated contexts.
- A laboratory and workspace outfitted with the digital tools employed in service to both gathering and disseminating information.

Together, the first two floors of the expanded Wallace Center offer a high-profile, highly visible, unambiguous commitment to the dissemination, reception and dialogue about discovery and learning. The space telegraphs to users and visitors that discovery without dissemination is a diary and that at RIT we value and promote the entire, robust continuum of learning.”

