

# Mixed-use Learning Zones for Millennials:

A Typology for Bridging Learning from the Academe to the Profession

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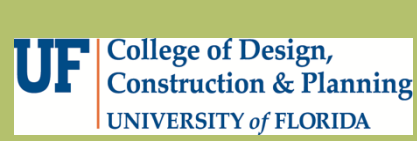


*To truly shift the educational paradigm, learning spaces also must reflect a network of connected places outside the classroom where learning can flow from one space to the next and a sense of community is fostered. - Kiefer, 2012*

## Abstract

Academic success hinges on student engagement; however, past research has mostly examined student engagement within the confines of the classroom walls. Today, knowledge is ubiquitous. New approaches to pedagogy and a generation of students who expect a less didactic and non-hierarchical learning experience have compelled administrators to rethink their facilities. The mixed-use learning environment is an emerging spatial archetype where learning transcends the classroom walls and extends into the larger socio-communal fabric of the institution. These spaces are intended to foster informal interaction, sparking interaction between students, faculty and others while helping foster a sense of community. Yet, to date there has not been an in-depth examination of the efficacy of mixed-used learning zones on campus. This research employed a mixed-methods, multi-case study approach and involved: 1) surveying a national online community of millennials; 2) conducting on-site intercept surveys with students enrolled in undergraduate, graduate and professional studies; 3) on-site behavior mapping of this range of students in five campus communities; and 4) communicating overarching themes through visual and interview-based narrative inquiry. Insights led to the development of a “Mixed-Use Learning Environments Typology” that captures the impact of the transformation in higher education.

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## Introduction

Active learning should extend beyond the classroom walls. Yet as many colleges and universities retrofit their enclosed classrooms for active learning they may easily overlook how the interior space outside the classroom can be designed to further enrich the learning environment. These “in-between spaces” can become powerfully catalytic places for informal and extended learning, social connection, and community building; however, all too often these common areas fall short of their potential—operating solely as holding tanks as students wait between classes.

Educators and interior designers rallying to build interconnected learning communities can be challenged by rapidly increasing inter-generational divides. Fueled by rampantly evolving technological and social paradigms, the millennial generation has drastically changed the way we need to think about education and space. Rosen (2010) argues that contemporary educational settings no longer meet the needs of this generation, stating that their minds have been “rewired” through increased exposure to information and social media. This “web-like” network of connections has endowed millennials with a high level of choice and control over their daily interactions (Smith, 2011), a preference which extends to the physical environment. This has increased their ability to multi-task, while decreasing their ability to focus (Bauman, Marchal, McLain, O’Connell, & Patterson, 2014). Studies have also shown a frequent mismatch between millennial learning styles and teaching methods used by faculty (Pardue & Morgan, 2008; Skiba & Barton, 2006). This population has shown a preference for learning environments that are informal and encourage socialization with professors (Kraus & Sears, 2008; Stanley & Dougherty, 2010). In contrast, many educators retain a preference for more formal classroom structures that often emphasize the process of teaching before the process of learning (Schaefer & Zygmunt, 2003).

One emerging and innovative design typology, the mixed-use learning zone, blurs the boundaries between commons and classroom spaces to support diverse stakeholder needs (millennial students, instructors, and staff) while encouraging informal social collision and catalytic learning interactions at all scales (individual, small group, class). In much the same way that mixed-use planning can activate urban centers, mixed-use learning zones create synergistic adjacencies and blended spaces that keep the learning environment multi-modal, active, and vibrant.

## Research Questions

1. What is the current climate of mixed-use learning zones in academia?  
Is there an evolving typology (e.g., components, adjacencies, scheduling practices, etc.)?
2. How do millennial students, instructors and staff respond to a variety of mixed-use learning zones?  
What perceptions, behaviors and interactions do different mixed-use characteristics actually encourage?

3. What practices should designers consider as they design mixed-used spaces for education at the college level? How can they best support community-building among all stake-holder groups?

## Methodology

The research team secured approval from the university's Institutional Review Board (IRB) prior to data collection.

### *Case Identification*

Researchers, in partnership with the university's facilities management department, identified a number of environments meeting initial mixed-use learning zone typology criteria and selected five for investigation. These cases included Heavener Hall (College of Business – Undergraduate), Hough Hall (College of Business – Graduate), and Harrell Medical Education Building (College of Medicine--Professional). For the fourth smaller space, Aha! The Innovation CoLab [also referred to in this document as Aha Co-lab] (College of Journalism and Communications, Center for Media Innovation + Research - Undergraduate and Graduate).

### *National Sample Survey Using an Online Community Portal for Millennials*

One of the key collaborators on the project, The Agency, has designed and launched an on-line virtual community for this generation (MAVY™), created and managed by millennials, to express their views among their peers, providing clients with a unique tool to test products, concepts, and ideas. The research team surveyed MAVY™ members to better understand their preferences with regard to learning environment design. Nearly 250 people responded to the survey.

### *Behavior Mapping*

Behavior mapping, a technique whereby researchers observe and document human behaviors as they occur within physical space, is a data collection method commonly used in social science research. Through 50 hours of behavior mapping, the team documented users' behaviors (e.g., using individual devices, screen sharing) to understand the various ways that different stakeholders make use of mixed-use learning zones. The team utilized a tool called MOV, developed by the Georgia Institute of Technology's SimTegrate Design Lab, which was useful in documenting systematic visual sweeps and exporting data for analysis.

### *Intercept Surveys*

Intercept surveys were distributed on the spot to students in each of the five case study sites to understand how UF students utilize each space and their levels of satisfaction with those spaces. Statistical analysis of the data was conducted.

## Interviews

The research team conducted interviews with stakeholders from each of the case study sites. Each interview lasted for approximately 30-45 minutes and focused on the purpose of the building and the overarching concept for the space, intended and typical use by building and space occupants, features and characteristics they liked the most and the least, the most and least utilized parts of the building, interaction levels among students, faculty and staff, the type of community and its culture, and any overall impressions or observations of the space. All interviews were recorded, transcribed and analyzed.

## Key Findings

Using mixed methods, the research team found evidence that helps explain the transformation of learning environments on campus. Cross-case analysis of the data from intercept surveys, interviews and behavior mapping observations led to the development of a typology of mixed-use learning environments with four distinct components. In higher education settings, an optimally designed mixed-use learning environment will address all of these components to successfully provide appropriate, flexible spaces that support collaborative and individual learning and enhance the student experience.

### *Strategies for Designing Mixed-use Learning Environments:*

- When successfully designed, students may love the space so much that they want to practically live there. Decide in advance how to address problems that may arise from the space or building being “too sticky”.
- Strive to create highly interactive and flexible spaces to foster experiential learning and promote engagement. But, be cautious not to over-do it with flexibility by installing systems, like movable walls, that are difficult to use and therefore do not achieve their intended purpose. Remember, not every space can serve every purpose, so it is important to designate some spaces for specific types of activities (e.g., quiet versus noisy, collaborative versus heads down).
- Design learning spaces that are informal and minimize the traditional teacher-student hierarchy. Students enjoy facing one another if they can easily view information being presented by the instructor or other students on a large monitor.
- Provide numerous writing surfaces (e.g., white boards) for students. Even though they are nearly always connected to technology, millennials still like to write and draw to share their ideas with others.
- Include spaces that adequately support individual study, even if the mission of the college or program is to promote collaborative learning.

Additionally, narrative film clips showcasing a narratives that capture the learning experiences and insights of students, teachers and other stakeholders engaged in a range of dynamic mixed-use learning zones (as revealed through the findings of the study) was created, along with design guidelines for easy accessibility to our audience: educators who want to use such spaces more effectively, design professionals who want to create the most functional and attractive spaces for their clients and end users, as well as administrators, facility planners and staff who want to make informed decisions about investing on their campuses.

Case study photos are located in Appendix A and summaries are located in Appendix B. The research team is developing manuscripts for publication in peer-reviewed journals and, therefore, is providing a limited summary of findings in this report. However, those interested may view 3D virtual tours and narrative videos developed for each case study at the links below.

### ***Narrative Videos***

Marston Science Library Collaboration Commons

<https://edl.dcp.ufl.edu/video/Marston.mp4>

Aha! The Innovation CoLab

<https://edl.dcp.ufl.edu/video/AHA.mp4>

Harrell Medical Education Building

<https://edl.dcp.ufl.edu/video/Harrel.mp4>

Heavener Hall

<https://edl.dcp.ufl.edu/video/Heavener.mp4>

Hough Hall

<https://www.youtube.com/watch?v=O9NdpKKaLLU&feature=youtu.be>

### ***3D Virtual Tours***

Marston Science Library Collaboration Commons

[www.edl.dcp.ufl.edu/marston](http://www.edl.dcp.ufl.edu/marston)

Aha! The Innovation CoLab

[www.edl.dcp.ufl.edu/aha](http://www.edl.dcp.ufl.edu/aha)

Harrell Medical Education Building

[www.edl.dcp.ufl.edu/harrell](http://www.edl.dcp.ufl.edu/harrell)

Heavener Hall

[www.edl.dcp.ufl.edu/heavener](http://www.edl.dcp.ufl.edu/heavener)

Hough Hall

[www.edl.dcp.ufl.edu/hough](http://www.edl.dcp.ufl.edu/hough)

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**APPENDIX A**  
**Case Study Photos**

**MARSTON SCIENCE LIBRARY**



*Photo Credits: Mike A. Bosch*

**AHA! THE INNOVATION CoLAB**



*Photos Courtesy of Steelcase, Inc.*

**AHA! THE INNOVATION CoLAB**



*Photos Courtesy of Steelcase, Inc.*

## HARRELL MEDICAL EDUCATION BUILDING



*Photos Courtesy of Charles Perry Partners, Inc.*

**HARREL MEDICAL EDUCATION BUILDING**



*Photo Credit: Mike A. Bosch*



*Photo Courtesy of Charles Perry Partners, Inc.*

## HEAVENER HALL



Photo Credit: Benjamin Simons, UF Warrington College of Business; University of Florida - Hannah Patrick



Photo Credit: Mike A. Bosch

## HEAVENER HALL



Photo Credits: Benjamin Simons, UF Warrington College of Business; University of Florida - Hannah Patrick

HOUGH HALL



Photo Credits: Benjamin Simons, UF Warrington College of Business; University of Florida - Hannah Patrick

HOUGH HALL



Photo Credits: Benjamin Simons, UF Warrington College of Business; University of Florida - Hannah Patrick

**APPENDIX B**  
**Case Summaries**

## Case #1 – Marston Science Library

### Description

First Floor Renovation Project

Completed: 2014

Architect: Brame Heck Architects

Interior Design Team: Lori Martens and Marie Brown, UF PD&C

Cost: \$5.7M

Size: 26,000sf, approximately 700 seats

Students: Undergraduate and Graduate

### Key Features

21 group study rooms

Open workspace groupings

Multipurpose conference room

Made @ uf app development/3D scanning

### Key Findings

Third place

Ambient environment

Flexible furnishings

Technology Support



## ROBERT MARSTON SCIENCE LIBRARY

UF Building 0043

444 Newell Dr., Gainesville, FL 32611

## Case #2 – Hough Hall

### Description

Warrington School of Business, Graduate Business Studies Building  
Building, 3 Floors  
Completed: 2010  
Architect: Rowe Architects with Sasaki Associates  
Cost: \$23M  
LEED Gold  
Size: 70,000sf, approximately  
Students: Graduate

### Key Features

State-of-the-art classrooms  
Career development and counseling services  
Student meeting and study spaces  
Student lounge and lockers  
Breakout rooms  
21 group study rooms

### Key Findings

Collaborative environment  
Too sticky  
Too much flexibility  
Individual versus group space  
Professional environment- graduate school



**WILLIAM R. HOUGH HALL**  
UF Building 0064  
1404 Union Dr., Gainesville, FL 32611

## Case #3 – Heavener Hall

### Description

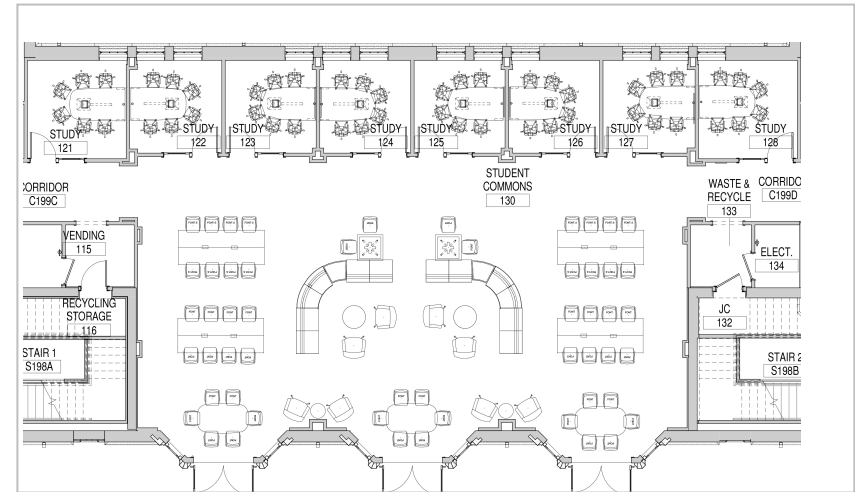
Warrington School of Business, Undergraduate Business Studies Building  
Building, 3 Floors  
Completed: 2014  
Architect: Schenkel Shultz with Robert A. M. Stern  
Contractor: Ajax Building Corporation  
Cost: \$35M  
LEED Gold  
Size: 35,000sf  
Students: Undergraduate

### Key Features

Classrooms  
Office for academic, study abroad  
Career advising and leadership development  
Study lounges  
Team meeting areas  
State-of-the-art business information systems

### Key Findings

Sense of place and space  
Backpack to briefcase  
Visualizing success  
Functional utility  
Tech support



**JAMES W. “BILL” HEAVENER HALL**  
UF Building 0065  
1325 W University Ave., Gainesville, FL 32611

## Case #4 – Harrell Medical Education Building

### Description

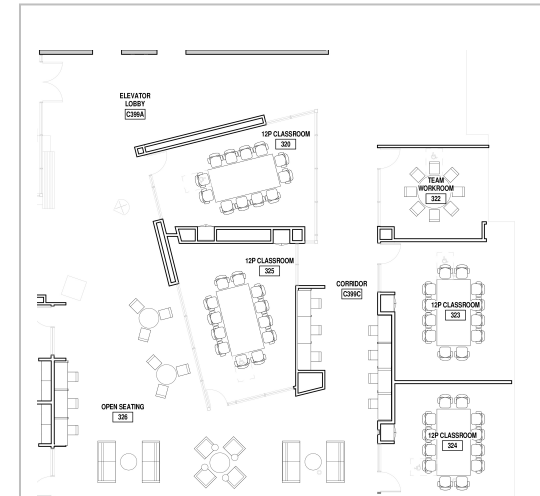
College of Medicine  
Building, 4 Floors  
Completed: 2015  
Architect: Heery International with Ballinger  
Contractor: Charles Perry Partners Inc.  
Cost: \$45M  
LEED Gold  
Size: 95,000sf  
Students: Professional

### Key Features

Learning studios  
Small group study  
Experiential learning center  
Study areas  
Areas for special media use  
Student lounge/gathering space  
Quiet study area

### Key Findings

Built for collaborative learning  
Change up your study style  
Casual encounters  
To sleep or not to sleep  
Technology is key  
Bringing the outside in  
Nighttime  
It's our turf  
Choice and control



## GEORGE T. HARRELL M.D. MEDICAL EDUCATION BUILDING

UF Building 0214

1104 Newell Drive, Gainesville, FL 32611

## Case #5 – Aha! The Innovation CoLab

### Description

College of Journalism and Communications, Center for Media Innovation and Research

Completed: 2012

Design Team: Designed by Jason Meneely, Joe Garcia, Architect of Record

Contractor: Anglin Construction

Cost: \$250,000

Size: 2,000sf

Students: Undergraduate

### Key Features

Central work area

4 breakout sites

Collaborative café

### Key Findings

Distractions- good or bad?

Professors love it or hate it

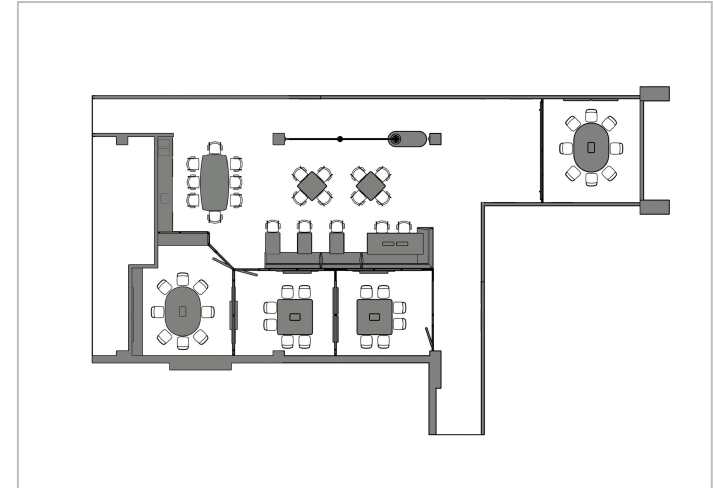
Should I stay or should I go?

Preferred seating

Where is it?

Monitors, monitors everywhere

The Café is a great idea but . . .



**AHA! THE INNOVATION COLAB**  
UF Building 0030 (in Weimer Hall)  
1885 Stadium Road, Gainesville, FL 32611

