Transformative and Innovative Learning Space Design Will Require a CHANGE IN CULTURE of All Stakeholders.

P.K. Imbrie
Professor and Head, Department of Engineering Education and Professor of Aerospace Engineering and Engineering Mechanics
University of Cincinnati

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How much has the way students learn, the way we teach, and the spaces we use for the educational enterprise changed over time?
Roughly 100 Years of Progress????
Culture and People are Inseparable

With respect to designing buildings, learning space (formal - classrooms and laboratories and informal - makerspace) and student success space...

What is your campus culture?

Values
Beliefs
Customs
Attitudes
Changing the way we think about our learning spaces: “a commodity” to “our brand”

Google Office, Zurich
<table>
<thead>
<tr>
<th>Who is Involved?</th>
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<tbody>
<tr>
<td>President</td>
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<tr>
<td>Provost</td>
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<tr>
<td>Registrar</td>
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<tr>
<td>Dean</td>
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<tr>
<td>Faculty</td>
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<tr>
<td>Facilities Planning and Design</td>
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<tr>
<td>Space Management Personnel</td>
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<td>Maintenance Personnel</td>
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<tr>
<td>University Architect</td>
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<tr>
<td>Environmental Health and Safety (EHS)</td>
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<td>Fire Marshal/Code Authority</td>
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<td>University Police/Security</td>
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Who is Involved?

<table>
<thead>
<tr>
<th>Laboratory Technicians</th>
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<tbody>
<tr>
<td>Transportation/Parking</td>
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<tr>
<td>Physical Plant</td>
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<tr>
<td>IT/AV/Classroom</td>
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<tr>
<td>Technology Systems</td>
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<tr>
<td>Students</td>
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Classroom Design Involvement

Should be...

Is actually...
Meet your Classroom Design Team

Faculty Member 1

IT/AV/Classroom Technology Systems Person 1
Faculty Member 1

Full Professor – Has been a faculty member at 4 intuitions over the past 25 years and has won multiple teaching awards. Believes in an active lecture form of engagement with students, but thinks technology (in any form) should not be part of the classroom experience. This person derives energy from being the center of attention in the classroom environment.
This individual has a Ph.D. in Classroom Instruction & Curriculum and previously worked as a consultant with the Center for Teaching Excellence on Campus and has won several campus wide awards for contributions to instructional practices. This individual now works specifically with the IT/AV campus group. The individual believes strongly in use of an active/collaborative blended teaching environment supported with technology.
Materials
Your charge is to design the layout of a “typical” classroom using the perspective of your assigned archetype.

Using the space given, consider:

- Furniture
- Technology / locations
- Writing surfaces
- No. of students the space will support
Specific Case Studies
Taking a Systems View of our Learning Spaces

Instructors

Learning Space

IT

Students

Pedagogy
Taking a Systems View of our Learning Spaces

Space

IT

Students
Consideration 2: Instructor-Student Interaction
Formal Learning

- 18 – 100 person studios
- 14 – 48 person studios
- Are designed to facilitate a range of teaching styles (e.g., traditional lecture, active/collaborative).
- Will allow instructors and teaching teams to reconfigure the space to best fit teaching needs and course design.
- Will accommodate courses being taught remotely.
Inside

- Low profile raised floor for future proofing technology.
- Wireless connectivity.
- Flexible furniture.
- All walls are writeable surfaces.
- Monitors located around the room.
- Cameras and microphone arrays for capturing room activity.
What would your laboratory growth model look like?
Who is on your team to make change happen?
Modeling Laboratory Space Need

Using a linear growth model, as space is currently used, space needs based on changing utilization efficiencies will come on-line.
Nine (9) Common Laboratories for which 2 or more departments share experiments and equipment.
• Available 24 hours a day, 7 days a week
• Maximize the utilization of the lab areas with common labs with interdisciplinary themes
• Each lab is overseen by a faculty sub-committee representing all the departments involved with the respective lab
  – They are identifying new/existing equipment for the lab
  – Establishing staffing requirements
  – Establishing operational procedures
• Each lab sub-committee is represented by an elected member who serves on the Executive Steering Committee
Traditional Paradigm

- Laboratory Instruction
- Laboratory Practice
New Ways of Engagement

Laboratory Instruction

The “what’s” & “how’s” of the laboratory experience

- Traditional Lecture
- Low Fidelity Simulation
- High Fidelity Simulation
- Video Lecture
- Artificial Reality
The “what’s” & “how’s” of the laboratory experience

Laboratory Instruction

Experiences intended to better prepare a student to engage in the actual practical experience of a lab BEFORE going to lab.
New Ways of Engagement
Informal leaning Spaces

Common Labs
Envisioning The Engineer of the Future