

# VCU School of Pharmacy

A Dramatically New Learning Environment Smith Building — Classroom 221





***Prototype for the Future***

*“The VCU School of Pharmacy is preparing learners for a world that requires sophisticated problem solving and innovation skills. Meeting that challenge requires leadership with vision and the courage to step out of ordinary patterns and conventional methods; a leadership willing to embrace new technologies and learning theory.*

*Learning is not an event. It is a lifelong process. I see this space as a prototype... a living laboratory where young minds and even a few professors can learn to innovate.”*

*This is an exciting promise of the future.”*

William E. Smith, Pharm.D., MPH, Ph.D.  
 Professor and Executive Associate Dean

***A Dramatically New Learning***

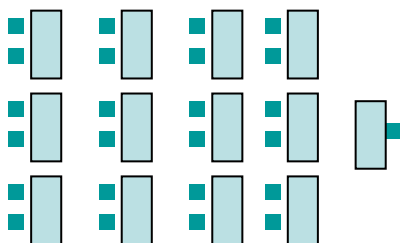
Creating an advanced, learner-centered environment for pharmaceutical students is a challenging design problem. Because medical and health topics in the Doctorate of Pharmacy curriculum are extremely complex, the spaces must encourage high-level collaboration and teamwork for group problem-solving.

The leadership at Virginia Commonwealth University School of Pharmacy, located in Richmond Virginia asked, “Is the traditional, lecture-style, regimented classroom the best way to support learning, teamwork, technology and problem solving?” The answer was no. Clearly, a new classroom concept was needed.

***Rejecting the Standard***

The School of Pharmacy, wanted their graduates to be a step ahead by learning to use new problem solving and innovation techniques involving peer to peer collaboration. The typical classroom configuration – with students all facing the front, toward the instructor (sage on the stage) - limits knowledge flow to one direction. And because students must twist around in their seats to see others, group participation and discussion are discouraged.

Dr. Smith expressed his desire for a new type of collaborative learning environment.



*Traditional classroom layout*

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He said, “*I’d like to see teams able to work in the space. The instructor should give the students a project with a problem to solve. They must research it and then working together come up with the best solution and then prepare their results and present them back to the other teams for critique. The professor becomes more of a facilitator, coach and advisor to help a struggling team*”

With Dr. Smith’s goals in mind, a design team from Eyeway began to develop a dramatically new learning environment using three related concepts.

***Concept 1***

*Multiple Small Team Areas.* Since the optimal team size is about 8 students, the design would provide the students with multiple, adjacent, small team areas that have a rich selection of collaborative tools. Each small team unit is defined by an architectural superstructure that supports utilities, displays and image capture technology.

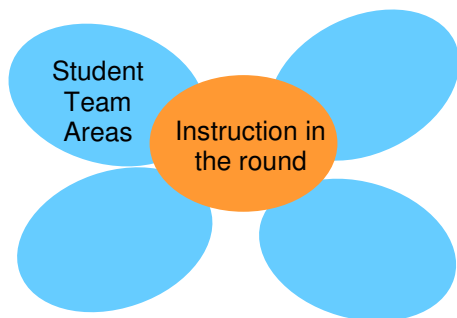
The preliminary requirements included:

- Teams with an ideal size of 8 students
- Ability for students able to collaborate and present from their laptops
- Whiteboard and writing capture technology
- Ability to compare work with other teams
- Ability to work in sub teams
- Ease of gathering content from the web
- Present findings back to all teams via display technology

***Concept 2***

*Teaching in the Round.* The team areas can be configured like the petals on a flower, so that a single instructor can move out of the center to coach a team or be centralized to address all teams at once. A wireless lectern allows the instructor to illustrate ideas on all screens or on just that team’s.

*Illustration early concept student team area*



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*Illustration early concept  
Instructor's central area*

**Concept 3**

*An Adaptable Interior Architecture that Links Student Team Units and Instructor's Area.*

Being an older building, the University did not want to break into or disturb the building architecture. An adaptable interior architecture was needed. Spaces are defined with no more than an outline of posts and beams, and yet can be visually open for long lines of sight. The posts and beams are a visually contemporary hybrid of architecture and furniture that carries utilities, provides a highly adaptable support for hanging screens, whiteboards and technology displays. One measure of success is that students return after class hours to do personal work and research because they would rather work here than anywhere else.

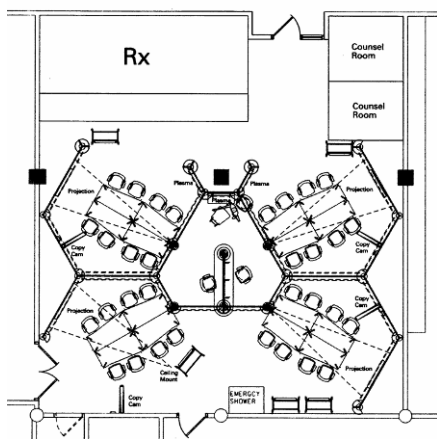
Success can be defined as:

- Layout matches purpose and defines team areas without solid walls.
- Everything works together as a system
- Supports and holds technology infrastructure
- Provides utility access to students

**Planning & Design**

To support the ways people work and learn, true integration must be based on a symbiotic relationship between architecture and technology. Therefore, the design and planning process must be collaborative, with each team needing to be able to understand the language and criteria of the other.

The architectural and design team worked side by side with Eyeway's technology engineering team. Working through each element together in order to ensure the original vision and concepts were held whole.



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*Whiteboard Capture System*

From a technology engineering standpoint, this was not a simple system:

- Four team areas with technology
- Control of the entire system or any
- Wireless mobile interface by the instructor
- Individual control and access for students
- Ability to present from their location to all of the other teams
- Distance teaching
- Role playing in Pharmacy

***A Learning Scenario***

The instructor presents a challenge to all four student teams. The case and criteria is presented using the wireless lectern, which displays simultaneously on the large LCD monitor in the instructor’s area and on the screens in the team areas.



Learners begin working on the task in their team areas. Individuals in each team focus different parts of the problem. The group integrates individual findings using the CopyCam whiteboard installed in each student. As the solution becomes clear, the group can instantly capture the ideas electronically, to be used as illustrations in their final presentations.

Once a team has solved the problem successfully and has created a presentation on their laptop, the instructor can route the solution to all screens in the classroom. If interesting alternative solutions occur, presentations can be viewed side by side, compared and contrasted.

***Results***

All good projects have concrete measurements to gauge success. Of course there is the anecdotal feedback the students and instructors have been providing. However the result that counts is that, in comparison to the same class taught in a tradition classroom, test scores are higher in the new space. Additionally, students like to stay after class and use the space and technology to work on projects for other classes held in traditional classrooms.

