

Activating the Classroom

Faculty and students at HACC, Central Pennsylvania's Community College, embrace active learning

It's just one of nearly 300 classrooms on the five campuses of HACC, Central Pennsylvania's Community College, but it's had an outsized impact at the institution.

Their active learning classroom has been so effective at boosting student engagement, participation and collaboration, and become such a popular teaching space for faculty, that the college is now considering "how we can thoroughly convert, over time, our inventory of traditional classrooms into a mix of different kinds of active learning spaces," says Michael Corradino, dean of academic affairs at HACC's Lancaster Campus.

The 851-square-foot active learning space, created with mobile Steelcase Education furniture and tools, has changed how teachers teach and how students learn.

"Boy, do they talk about the difference. As teachers and as students, once they get into that room and have that mobility, it's really a shock and a bit of a disappointment for them to have to go back to an old-fashioned room," says Corradino.

"I've heard, almost to a person, how they wish they had all their classes in the active learning room."

MATH 103 — COLLEGE ALGEBRA

HACC uses the active learning classroom for a variety of courses, including English, speech, business, education, and radiologic technology. College algebra is taught by Susan Cooper-Nguyen, a full-time HACC faculty member and a teacher for nearly 20 years.

She describes her typical student as "non-traditional, a 27-year-old female with two kids, coming back for a change of careers, with a lot of anxiety and fear about college.

"The active learning classroom isn't as rigid as a traditional room, it's open and colorful and mobile, and that helps take away some of that fear and anxiety right from the start."

In group mode, students move around the classroom and use the Verb whiteboards to collaborate, share ideas and then present those ideas to the class.

Students use iPads in this course, both to watch videos online before class sessions and for use during class. "I go around the room and I work with a student on a math problem, and we project that work on the screen as we're doing it. All the students can see it as it happens, in real time, and I answer questions. As we go, we record the video, and I post it online. Everything we do I can upload to the course site. They're usually little, five-minute recordings. They can watch them at home that night, re-look at them, hit rewind a thousand times if they want."

Cooper-Nguyen makes great use of personal whiteboards that hang on hooks on the Verb tables. “I’ll say, ‘Okay everyone, bust out the whiteboards. You guys work out this problem.’ I walk around, I see what they are doing, help them out. I’ll see someone’s solution and I’ll say, ‘Here’s a good one, look at this.’ Some of the students have better handwriting than I do, so I put it up on display and leave it there, like a piece of art.”

When she started teaching this way, other faculty members thought attendance would suffer. “Actually, this class has better attendance than my other classes. We do a lot of activities in groups. People still want human interaction, or they’d take it as an online course.”

Most of her algebra students are not math majors. “The environment of this classroom and the technology marries so well. It’s a relaxed place. It’s not me standing up, lecturing for 90 minutes.”

The flexibility of mobile classroom furniture enables teachers to try different class layouts and seamlessly shift a class from one teaching mode to the next.

She also tries different class layouts on the fly. “There are different teachers in the room before and after me. Every time I come in, it’s in a different set-up: amphitheater, circle, group, whatever. The students and I just roll with whatever the set-up is when we arrive.”

FS 100 — COLLEGE SUCCESS

Designed for freshman students to learn study skills and other “soft” skills useful in any major, this is one of HACC’s Foundational Studies courses. Many of the course’s collaborative activities were developed by instructor Melissa Dietrich. “The course helps students, many of whom are the first generation in their family to go to college, to navigate and be successful in college.”

The new active learning classroom, she says, helped get her out of a teaching rut. “In the old classrooms, I found myself lecturing what was in the textbook. I ask a question, some students raise their hands, some never raise them. You hear from the same ones all the time.

“Now they have mobility, they can collaborate more, so they learn that sitting in the room is not enough; they have to be active participants.”

Students read and prep before class, “so they can apply the knowledge in active situations: group discussion, case studies, small group work. For example, they’ll meet in small groups to come up with ideas for solving a problem. They do some brainstorming, write down ideas on the Verb whiteboards, and then they share them with the whole class. Then we display the boards on the whiteboard easel.”

“The whole point is teaching students to be active participants in their learning.”

The class timing can be a challenge: FS 100 is typically offered in the afternoons. “It’s after lunch, people are sluggish. In the past I’d see a lot of nodding off. There’s a lot less of that now because they’re moving around, talking, working together, and there’s definitely a lot more participation. If there’s a sluggish group, I can go over and plop down with them and get them going.”

Professors walk the classroom and meet with groups of students to ensure that everyone is being challenged at a pace suitable for them.

Dietrich often finds creative ways to leverage the mobility of the furniture. “After the first couple weeks, students get into their groups and they get a little comfortable. I wanted them to reach out to others in class, to get to know other people. One day, I made them move all the tables out of the way. It was just chairs in the middle of the room. Then they had to go around to talk to other people to elicit different information. It was something you couldn’t do in a traditional classroom. They looked at me like, am I serious? Then they wheeled around on their chairs, and realized they can talk to people outside their group. It was a great activity.

“The whole point is teaching students to be active participants in their learning.”

RADT 209 — IMAGE ANALYSIS

Sara Crill, a tenure-track faculty member at HACC, teaches radiologic technology students how to analyze x-rays.

“In a typical exercise, I provide an image for the students and they have to figure out how it was created and how it could be improved. Everything the radiologic technologist does affects the image results.”

Crill says traditional lectures are not as effective as hands-on, active learning experiences “where students are more active, working with materials, models.”

Students study the textbook and the lecture online, and in the classroom work in small groups. “They come to a consensus and present to the full class. They have to justify their analysis, then lead a discussion with the class.”

Creating proper diagnostic images to adequately display subtle internal structures is a complex process, and often leads to classroom debates.

“There isn’t always just one correct answer; there are many possibilities.”

Students eagerly join the discussion. “They come up to the whiteboard, draw arrows and circles and present other ideas. The critical thinking that occurs in that room is phenomenal.”

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Students are put into groups to discuss class content and teach one another. Peer-to-peer learning helps some students reach a better understanding of the content and challenges the accelerated students to take on an educator's role.

Crill previously taught the course in a computer lab. "Each student had their own computer, I'd be at the front of the class asking questions. It lended itself to lectures, with me the one to always clarify the information.

"In the active learning classroom, the process forces them to be prepared, to use the proper terminology, to find their own voice and articulate their thinking."

In small group, active learning, students are not only more engaged, but learning from each other. "You always have some students that are higher functioning, and some who struggle more to understand concepts. In small groups, the students who understand the concepts easier tend to explain, and try to draw conclusions, and point out different things to students who don't get the concept as quickly. This meets both students' needs. The higher functioning students don't get bored, they help teach. The other students get repetition, plus sometimes when a peer explains it, they understand it better."

Students who learn at different paces are supported in another way, too. "Sometimes it's helpful to mix up students who learn at different paces. When one group advances quickly, you can give them another challenge while the others are catching up. You can meet students where they're at.

"When you're lecturing you have no idea where students are at, even if you ask questions consistently. No way you can ask enough questions in a large classroom to gauge where each student's comprehension is at. When I walk around, I see the students and their work, I can probe, learn where they're at."

Verb whiteboards are sometimes used as "station labels" for exercises at individual stations that students work through during a class period. "I also use them to poll students about an answer to a problem. Instead of raising their hands, they have to write down their answer, commit to it. Then students have to explain their thinking for that answer.

"To see them so knowledgeable, to show what they've learned, to articulate it and defend their thinking, it's pretty neat to see."

EVALUATION

The active learning space, says Corradino, changes the way students act and interact. "It's been eye-opening for me to really see how important that component is and how in many ways for us, that's been the biggest lesson."

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“If tomorrow I went to the faculty teaching in that room and said, ‘Okay, I’m going to take away the technology or the furniture.’ They would say, ‘Well, keep the furniture, that’s actually more important now to what we do than the technology.’

“It’s been such a catalyst for the institution to really take seriously how we do active learning, collaborative learning, in terms of our curriculum and instruction. It really is amazing. One room can really start a major process rolling.”

“I love the room. I almost feel guilty using another space; the students are not getting the advantages of the new room,” says math instructor Susan Cooper-Nguyen.

As Melissa Dietrich told her students, “We definitely have the coolest classroom anywhere on campus.”

And for radiologic technology students, the image is crystal clear: for the last three years in a row, 100 percent of HACC’s radiologic technology graduates have found employment in the profession.

WHAT’S WRONG WITH THIS PICTURE?

How would you improve it? These are simple questions that Sara Crill poses to her students in Imaging Analysis, a high level core class in the radiologic technology curriculum.

The answers are decidedly less simple, and critically important: these future radiologic technologists are learning how to properly take X-rays that help determine patient diagnoses.

Students use mobile Verb tables and node chairs to collaborate in small groups to determine answers about an assigned image, then use Verb personal whiteboards to share their analysis with the rest of the class.

“I watch and listen to their interactions, why they think something, how they explain it. It’s remarkable what they come up with. Sometimes I’ll think, ‘Oh that’s a neat way to explain that concept. I can use that myself.’”

The classroom and Crill’s pedagogical approach combine to immerse the students, actively involve them in learning, and improve the educational experience for both the students and the teacher.

“We engage students, and that makes them want to learn more. It takes more effort and time and dedication to teach that way, but it’s definitely rewarding.”

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