**“The room itself is active”:**

**An assessment of the CELT Active Learning Classroom**

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**Background**: Active learning has become an integral part of the undergraduate experience. According to NSSE (2013), 44% of first-year students and 52% of seniors engage in active and collaborative learning in class. Iowa State University has a need for higher quality classrooms to maintain the quality of the student learning experience due to record enrollments. As a result, the Center for Excellence in Learning and Teaching (CELT) at Iowa State has committed resources to the re-design an existing classroom to an “active learning classroom” (ALC) resulting in an integrated, student-centered learning space.

**Purpose:** Conducted as part of a campus-wide evaluation of learning spaces, this assessment of the CELT ALC investigated how instructors utilized the physical and technological attributes of the classroom’s design to promote active learning, and how the classroom design enhanced learning from the students’ and instructors’ perspectives.

**Setting**: Iowa State University of Science and Technology, a flagship university of the Iowa university system, is a public [land-grant](http://en.wikipedia.org/wiki/Land-grant_university) and [space-grant](http://en.wikipedia.org/wiki/Space_grant_colleges) research university located in [Ames](http://en.wikipedia.org/wiki/Ames,_Iowa), [Iowa](http://en.wikipedia.org/wiki/Iowa). A total of four faculty and nine students participated in the study.

**Assessment Design:** Utilization-focused and responsive evaluation approach; qualitative methods; cross-sectional design.

**Data Collection and Analysis:** Data was collected through focus groups and interviews on intended and actual classroom use by participants’ descriptions of active learning experiences in the ALC. A phenomenological approach to data analysis focused on capturing significant statements of active engagement in learning in the classroom. A multi-stage coding method investigated relationships between various codes to create themes on the use, effectiveness, and impact of the classrooms’ design in creating an active learning environment.

**Findings:** The instructors utilized the various classroom features, such as the movable chairs/desks, portable white boards, supplemental monitors, and other learning tools to promote active learning. The chairs/desks and portable white boards were the most utilized, and most effective, aspects of the ALC’s design. The classroom design (a) enhanced student learning through its flexibility to adapt the classroom space to accommodate various learning strategies, (b) allowed for students and faculty to easily move in and around the ALC maximizing the use of the space, and (c) allowed for enhanced visibility of course content. Students felt they were part of a community of learners in the classroom, and stated they felt more accountable and motivated to learn in the ALC. The increased adaptability, flexibility, and openness of the design of the CELT ALC allowed students to feel more connected to their classmates and their instructors. Instructors also demonstrated a willingness to change their instructional strategies, focusing on more “integrated” teaching and incorporating technology into their lessons. However, instructors also hesitated to add more active learning strategies or incorporate technology if they were not placed in the ALC, or a similarly-equipped classroom, for future courses.

**Conclusions:** This assessment demonstrates that flexibility is a key attribute in promoting an active learning environment. The low-cost learning tools were the most effective aspects of the design, which are easily added to existing classrooms without substantial alteration to the physical space. The design of the CELT ALC created a learner-centered space which promoted students’ motivation to learn and gave them a sense of control over their learning environment. The design also influenced instructors’ behavior in utilizing active learning strategies. Instructors demonstrated a willingness to add more active learning strategies to their courses if the classroom space facilitates the use of these strategies. The findings in this study reiterate that re-designing more classrooms into active learning spaces like the CELT ALC creates high-quality classrooms that enhance the student learning experience at Iowa State.

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**Selected Participant Quotes from the Study**

*[Course] is very complicated so it’d be nice to draw things out. I thought to myself, ‘Well, [the CELT ALC] has all these whiteboards that you can take off and there’s individual ones [portable white boards] so we could have this system here, this system there’….we actually went up there. We filled the whole hallway with all the whiteboards and organized it all. It was really … I mean, we used it for a different class but* ***it was nice to have the knowledge of knowing a place on campus that we can do something like that*** *and really utilize that.* (Student)

*And in the class…there are maybe 30, maybe 40 started, students in a classroom. It’s very ...****we get to build very intimate relationships with each other*** *and we can have really, really good small group discussions and go into large group discussion very easily.* ***And there’s no transition barrier.*** (Student)

*This particular class was 80% male, and so there was a lot, like I said, a lot of motion, but I actually think that that was helping them focus because* ***they didn't have to keep themselves constricted****…by being able to physically relax in that way, they actually were very focused, it wasn't distracting.* (Instructor)

*You can come in and you can rearrange the room.* ***It should fit whatever the group’s needs are.*** *Professionally, having the ability to adapt to those different learning environments, so say, where you go from a lecture where the other professor is speaking to the entire class, addressing the entire class and then he says, “All right, break down with your teams,” and they can do that. We can go back.* ***We can go back and forth quickly and efficiently without wasting too much time in transition****.* (Student)

*When we were learning how to do the equations, it would be easier because we would all have our little corner that we would try to figure it out. Then we would come together and do it together within our small group. We would decide who did it right and who did it wrong, maybe which way is incorrect. Then he would bring our small groups together and do it together on the board so* ***you see it at least three times, so that helps it stay in your head.*** (Student)

*I'd say added connectivity [makes the CELT ALC effective].* ***It allows the student to interact, not just with his peers, not just with the instructor, but with the room itself****, to make use of its various facets. It seems like there's more there, more available to you.* (Student)

*Yeah, so the first thing I thought of when I saw the [portable white boards] and the whiteboards on the wall was how fantastic it would be to have a mathematics course that is integrated with groups and a professor or TAs or something like that****. I honestly at that moment thought, ‘why can’t all my math classes be like this?’*** *That’s really what I’ve been fixated on the entire time, how could I … thinking about how could I make this work.* (Student)

*I think the [CELT ALC] really precipitated, because they're not so stationary and separated from each other. Because of that I think they hear each other a little bit more and what that does is ...* ***I got to a point in the semester where the discussion started to take off like a fire****. These people will be here and these folks, and they're all talking about the same thing, but these folks will hear that and kind of respond to it because they're close…I see this, there's this moment when it moves across the room which is very exciting, because I have these students who start out so unsure and just not confident. I think that this****, everything about this room really enables that kind of outcome****.* (Instructor)

*‘I have this position or power, I control your grades therefore I am in charge.’ That’s what you get when you’re in the lecture hall… they’re all focused on this one person front and center has a piece on the stage. It really puts the focus on the instructor. But in [the CELT ALC], where everything is flat, and open, and spread out uniformly, the focus is distributed across the entire classroom across all of the students and instructor …* ***this professor is one of us…he’s there because he’s trying to facilitate our learning****…his role as a professor is to not only give us the material, he’s also here to facilitate our learning of the material and they hold us accountable for learning the material.* (Student)

*For Iowa State to do something like this to take this model and to create other classrooms and other areas on campus to really lead…****I don’t know, if other schools are doing this, if not, why?*** *I think in order to progress forward and to produce leaders in the community, and whatever discipline or academic field,* ***being able to do something like [the CELT ALC] is powerful, a powerful statement.***(Student)