

August 13, 2015  
SAC CAT CLASSROOM  
University of Northern Iowa  
2014-2015 Report  
Marybeth C. Stalp, Susan Hill & Phyllis Baker

## **I. Introduction**

The Department of Sociology, Anthropology and Criminology, in the College of Social and Behavioral Sciences, at the University of Northern Iowa (UNI) has a new CAT (Collaborative, Active learning, Transformational) Classroom in Bartlett Hall—a 24-seat classroom equipped with round tables, laptops, and flat-screen televisions—to encourage active learning and small group collaboration using available technology. This classroom contains four roundtables that seat six students each and the instructor's station is at the center of the room. Each table has 3 networked laptops and its own dedicated wall mounted monitor that can display data from a laptop on the table, the instructor's screen, or work from other laptops around the room. The classroom reflects a commitment to an active-learning pedagogical philosophy that infuses technology into collaborative learning spaces. The classroom follows the tradition of fostering collaboration and student interaction between student peers and faculty in an effort to enhance student learning outcomes.

Research on learner-centered pedagogy, including classrooms like SAC CAT, shows a strong positive effect on student learning (Brackenbury 2012; Weimer 2002; Wohlfarth 2008). We focus here on research conducted at the University of Iowa (UI), after which SAC CAT is modeled. Van Horne et al. (2012) document the shared efforts of securing TILE (spaces to Transform, Interact, Learn, Engage) classrooms on the UI campus. The research on these classrooms at UI indicates positive results for students and faculty (Florman 2014). Comparing four TILE courses and four non TILE courses taught by the same professor in a traditional classroom the previous semester at the University of Iowa resulted in students receiving higher grades (in line with previous research). Students reported that they felt more engaged and were enthusiastic about the classroom (Educause 2012). Learner-centered teaching reaps numerous benefits, building critical thinking skills and redistributing the power dynamic in the classroom away from faculty to students, who can then become more responsible for their own learning. (Weimer 2002).



Image One: Dr. Martha Reineke, Religions of the World, SAC CAT Classroom, UNI F2014

## **II. History of the SAC CAT Classroom at UNI**

The design of the renovation of Bartlett Hall included a computer lab for SAC. As the move for SAC was being finalized in 2013-2014, it became clear that there was no money to fund the computer lab in part because most computer labs on the UNI campus were, at that point, underutilized. In considering what to do with the space set aside for the lab, the Department Head, Dr. Phyllis Baker, explored the possibility of transforming the lab space into a high-technology, collaborative learning classroom. Baker approached units across campus about partnering to bring to UNI this kind of classroom. Support came from CSBS, Office of the Executive Vice President and Provost, Facilities Planning, and ITS.

UNI Facilities Planning staff members Morris Mikkelsen and Amy Selzer retrofitted the space originally housing the computer lab to accommodate the SAC classroom. Marilyn Drury

and Todd Hayungs developed an equipment proposal and garnered financial support for this project from the Vice President for Information Technology Services (ITS).

Once the room was retrofitted, additional funding during the last stages of the Bartlett renovation was secured primarily through the Office of the Provost and CSBS. From there ITS-ET (Information Technology Services Educational Technology) staff members set up the classroom and CSBS put in the laptops. The vision is that the SAC CAT classroom will be a prototype for other and hopefully larger such classrooms to be introduced across campus. It would be ideal for UNI to have two more of these types of classrooms but with 40-50 seats to better accommodate standard class sizes.

## Sociology, Anthropology, and Criminology CAT classroom – prototype for UNI

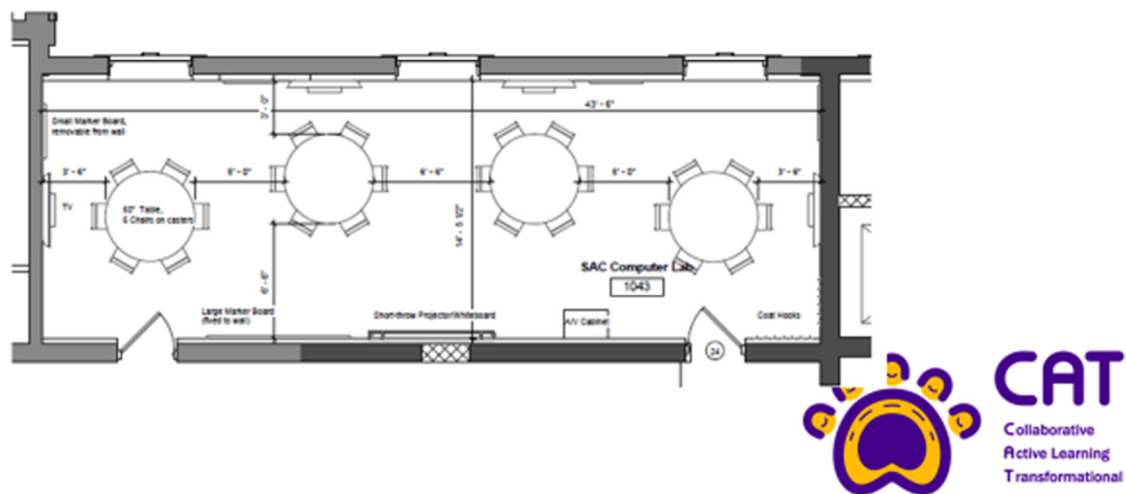


Image Two: SAC CAT Classroom Prototype for UNI

### III. UNI Faculty Development

Because the CAT Classroom is deliberately designed to encourage active learning with technology, faculty using the space for their classes need to be trained in the technological functions, as well as the pedagogical possibilities, of the room. All UNI faculty members are eligible to be trained in the use of the CAT Classroom, and courses have been scheduled through the SAC department since Fall 2014.

SAC, the Center for Excellence in Teaching and Learning (CETL) under the direction of Dr. Susan Hill, and ITS-ET partnered to develop training in the use of the CAT Classroom during summer 2014. The Provost funded \$500 stipends and lunch for faculty for the initial training period, as well as an honorarium and travel expenses for a trained facilitator. We invited sociologist Dr. Alison Bianchi, who regularly teaches in the University of Iowa's TILE classrooms, to share her expertise in both the technological and pedagogical aspects of teaching in a technology-enhanced classroom. Faculty spent two days in summer 2014 (May and August) for training. In May 2014 the first day of training with Dr. Bianchi focused on learning how to use the classroom space and engage students using the technology. Bianchi also demonstrated exercises she uses in her classes, and discussed how to begin transforming a course taught in a traditional classroom into a course that would work in the CAT classroom. In addition, members of UNI's ITS-ET staff demonstrated how to use the room's technology.

Over the summer, UNI faculty who wanted to practice using the technology set up sessions with ITS-ET staff. The faculty group met again in August 2014. Seven faculty presented learning modules that they had developed over the summer. The faculty group also discussed additional small group active learning strategies and brainstormed ways to handle, and to troubleshoot, technological problems in the room. As a result of the conversations among faculty and ITS-ET staff that day, two Google Groups were created within the university email system: one to share information about teaching in the CAT and one to contact the technology support staff regarding technology questions about the room.

#### *Sharing the SAC CAT Classroom with interested groups on campus*

- In August 2014 on the first day of classes, the SAC CAT Classroom was presented to the UNI Presidential Cabinet. Dr. Phyllis Baker began the session, with Drs. Martha Reineke and Marybeth C. Stalp demonstrating their learning modules from the summer training. ITS-ET staff were also present at the session to answer questions about technology.

- In November 2014, the SAC CAT Classroom was presented to interested faculty in an “open house” format. Drs. Reineke and Stalp again demonstrated their learning modules from the summer training. ITS-ET staff were present to answer questions.
- Also in November 2014, in a CETL-sponsored session, Drs. Reineke and Stalp, along with Dr. Kimberly Baker, presented “The CAT Classroom: Why YOU Might Want to Use this Room” to 7 interested faculty and staff.
- In January 2015, the CETL and ITS-ET offered a shortened workshop on teaching in the CAT classroom called, “All Paws on Deck: An Interactive Introduction to the CAT Classroom,” which was facilitated by two faculty members, Drs. Reineke and Stalp, who taught in the room during the Fall 2014 semester. 18 faculty members attended this workshop, including some faculty teaching for the first time in the room during Spring 2015. Those faculty were also encouraged to watch the Panopto recording of Dr. Bianchi’s workshop.
- In May 2015, 7 more faculty were trained in the pedagogy and technology of the CAT classroom for 1.5 days. The training was sponsored by ITS-ET and the CETL. The session facilitators were Drs. K. Baker, Reineke and Stalp. The CETL paid small stipends to the faculty facilitators for their work. Our intention is to continue to have faculty who use the room train others on the most effective uses of the room.

Faculty development in the CAT classroom is not only about training, it is also about sharing ideas and building a pedagogical community. All faculty teaching in the CAT classroom and the ITS-ET support staff have met once a semester over lunch provided by the CETL to share ideas about teaching in the room. We have moved from an outside trainer to a “train-the-trainer” model for teaching interested faculty about how to teach effectively in the CAT classroom, as there has been a marked increase in the faculty use of the classroom (see Image Three). Faculty who have taught in the classroom want to continue to teach there, and interested faculty are requesting additional faculty development in order to teach in the room.

Semester	Subject & Catalog Nbr	Sec	Course Name	Start Time	End Time	Days	Instructor	Bldg & Rm
Fall 2014	HPELS 2045		Health and Phys Ed	9:00 AM	10:50 AM	MWF	Hong, D	BAR 1043
Fall 2014	SOC 2010	02	Research Methods	1:00 PM	1:50 PM	MWF	Baker, K	BAR 1043
Fall 2014	SOC 2010	03	Research Methods	2:00 PM	2:50 PM	MWF	Baker, K	BAR 1043
Fall 2014	RELS 2010	01	Religions of the World	8:00 AM	9:15 AM	TTh	Reineke, M	BAR 1043
Fall 2014	RELS 2010	02	Religions of the World	9:30 AM	10:45 AM	TTh	Reineke, M	BAR 1043
Fall 2014	SOC 4050	01	Sociology of Gender	5:00 PM	7:50 PM	TTh	Stalp	BAR 1043
Spring 2015	HPELS 2045		Health and Phys Ed	8:00 AM	8:50 AM	MWF	Hong, D	BAR 1043
Spring 2015	HPELS 2045		Health and Phys Ed	9:00 AM	9:50 AM	MWF	Hong, D	BAR 1043
Spring 2015	CRIM 3225	01	Criminal Court System	10:00 AM	10:50 AM	MWF	Baker, K	BAR 1043
Spring 2015	CRIM 3225	02	Criminal Court System	11:00 AM	11:50 AM	MWF	Baker, K	BAR 1043
Spring 2015	ANTH 1002	05	Culture, Nature and Society	1:00 PM	1:50 PM	MWF	Woodcrick	BAR 1043
Spring 2015	ANTH 2401 RELS 2401	01	Tribal Religions	2:00 PM	3:15 PM	MW	Woodrick	BAR 1043
Spring 2015	RELS 4230		Religions in America	9:30 AM	10:45 AM	TTh	Burnidge	BAR 1043
Spring 2015	LYHS 6408		Financial Decision Making for Youth/Human Service Anengices	11:00 AM	12:15 AM	TTh	Olson, H	BAR 1043
Spring 2015	RELS 2010		Religions of the World	2:00 PM	3:15 PM	TTh	Reineke, M	BAR 1043
Spring 2015	SOC 3060 SOC 5060	01	Sociology of Culture	12:30 PM	1:45 PM	TTh	Stalp	BAR 1043
Summer 2015			Monsters, Vampires, and Religion	8:40 AM	10:50 AM	Daily	Reineke, M	BAR 1043
Summer 2015	CAP 3131	01	Analysis of Social Issues	12:10 PM	2:20 PM	Daily	Rhineberger-Dunn, Gayle	BAR 1043
Fall 2015	HPELS 2045		Health and Phys Ed	8:00 AM	8:50 AM	MWF	Hong, D	BAR 1043
Fall 2015	HPELS 2045		Health and Phys Ed	9:00 AM	9:50 AM	MWF	Hong, D	BAR 1043
Fall 2015	POL GEN 2010		Analyzing Politics	10:00 AM	10:50 AM	MWF	Peters, S	BAR 1043
Fall 2015	RELS 2059		Rel. & Politics	11:00 AM	11:50 AM	MWF	Burnidge, C	BAR 1043
Fall 2015	SOC 2010	01	Research Methods	12:00 PM	12:50 PM	MWF	Mack	BAR 1043
Fall 2015	SOC 2010	02	Research Methods	1:00 PM	1:50 PM	MWF	Baker, K	BAR 1043
Fall 2015	SOC 2010	03	Research Methods	2:00 PM	2:50 PM	MWF	Baker, K	BAR 1043
Fall 2015	ANTH 3103 RELS 3103	01	Religion, Magic, and Witchcraft	5:30 PM	8:20 PM	M	Woodrick	BAR 1043
Fall 2015	RELS 2010	01	Religions of the World	8:00 AM	9:15 AM	TTh	Reineke, M	BAR 1043
Fall 2015	PEMES 3186		Teaching Phys Ed w Tchnlgy	11:00 AM	12:15 PM	TTh	Hong, D	BAR 1043
Fall 2015	SOC 4015 SOC 5015	01	Qualitative Research Methods	12:30 PM	1:45 PM	TTh	Stalp	BAR 1043
Fall 2015	SOC 2075	01	Social Psychology	5:00 PM	7:50 PM	T	Froyum	BAR 1043
Fall 2015	RELS 2010	02	Religions of the World	9:30 AM	10:45 AM	TTh	Reineke, M	BAR 1043

Image Three: SAC CAT Classroom Schedule Fall 2014 through Fall 2015



#### IV. SAC CAT Classroom Research

After securing IRB, we began our research on the SAC CAT classroom. For fall 2014 semester there were 3 faculty teaching 5 classes that were included in the study (those teaching in the classroom for the entire semester, rather than just a portion of the class) and in spring 2015 there were 6 faculty teaching 8 classes that were included in the study.

The purpose of the first year of research on the classroom was to investigate the learner-centered pedagogy employed in the SAC CAT classroom. In AY 2014-2015, faculty, staff, and students were the initial users of the SAC CAT Classroom, and we aimed to study the effects of enhanced technology as it contributes to learner-centered teaching. Our research questions include:

- How can enhanced technology in the classroom be used for building a positive learning environment?
- How can enhanced technology in the classroom be used to enhance student responsibility?
- How can enhanced technology in the classroom be used to promote learner-centered pedagogy at UNI?

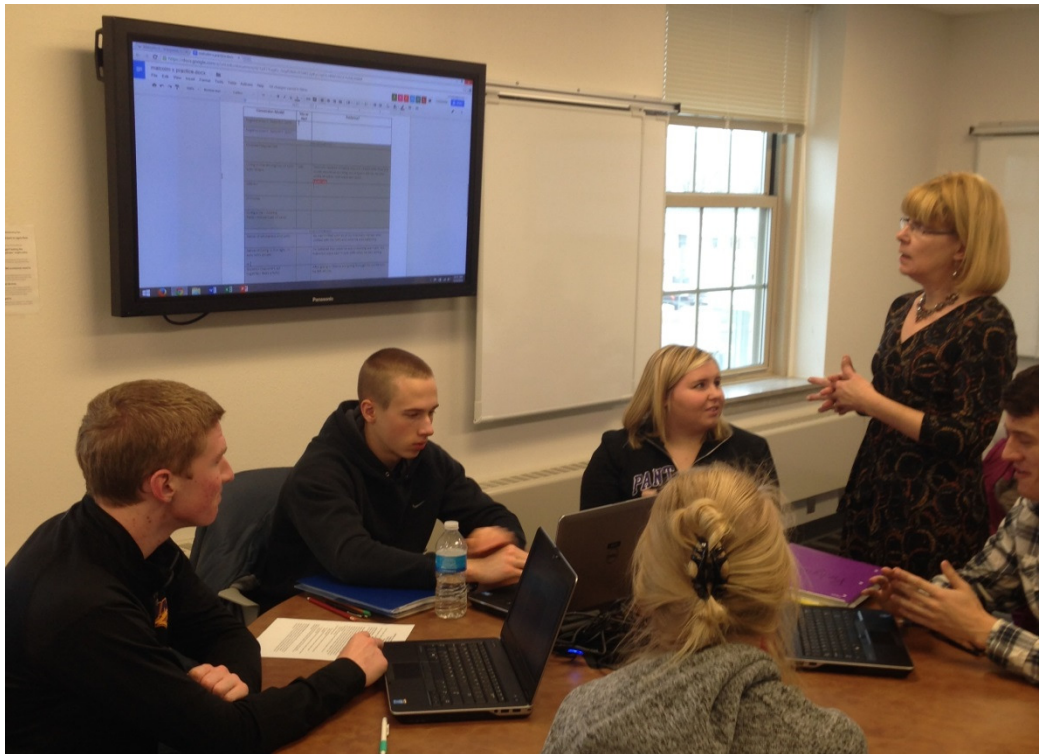


Image Four: Students interact with faculty in the SAC CAT Classroom

There were two data collection processes in this study. We divided our research into two users of the room, students and faculty/staff. For the first group, students, we collected quantitative and qualitative data from students at two points in the semester. We administered a closed- and open-ended survey to students at the beginning and end of the semester, with questions focused on student experiences with technology, group work in classes and the specific space of the SAC CAT classroom. Overall, the questions centered on if/how the technology enhanced classroom (and subsequent pedagogical changes implemented by the faculty member teaching the course) helped the students learn more effectively (See Appendices A and B for these instruments). We also conducted a third data pull for students which included a focus group (See Appendix C for student focus group questions). For fall 2014, we collected completed surveys from 71 students (e.g., both beginning and end of semester surveys), and 8 students participated in one focus group held in November. Spring 2015 resulted in 101 completed surveys, and 15 students who participated in a focus group in April. Our total number of completed student surveys is 172, and 27 students participated in focus groups.

The second part of data collection is interviews with the faculty teaching in the room and ITS staff who support the room. (See Appendix D for the questions used in interview data collection). In fall 2014 we conducted qualitative semi-structured interviews with 4 faculty, two undergraduate students Teaching Assistants, and 6 ITS staff members. In spring 2015 we conducted interviews with 2 additional faculty members who were new to the classroom. This results in a total of 14 qualitative interviews with faculty and staff.

Overall, we had 209 study participants through survey, focus group, and interview data.





Image Five: Students working collaboratively in the SAC CAT Classroom

## **V. Analysis and Results**

The data analysis presented below is from the 2014-2015 academic year, and is very encouraging. There were generally very positive outcomes from the faculty and the students.

### **Student Survey Results**

Students clearly report positive outcomes from being in the classroom. At the beginning and end of semester we distributed questionnaires with closed end and open ended questions to the students taking courses in the CAT classroom. Here we report both kinds of results. We have organized the most common results into Pedagogy, Engagement, and Classroom.

#### ***Classroom Pedagogy***

Students responded that they liked the teaching in the SAC CAT Classroom. For example, in the beginning of the semester, 83% of students agreed or strongly agreed with the following statement: “In general, group activities in class help me to learn.” At the end of the semester, 95% of students agreed or strongly agreed with: “Group activities in this class helped

me to learn the material that we were supposed to learn.” Similarly, 95% of students agreed or strongly agreed with: “I was given opportunities to develop my critical thinking skills in my UNI courses.” At the end of the semester 94% of students agreed or strongly agreed.

In the open-ended area of the survey, students also reported positive experiences in how the classroom was used in regards to pedagogy:

*“I liked that the room itself felt more comfortable as time when (sic) on. I also enjoyed that the tables created a sense of community and team building. The technology made it easier to work with the materials and as a group. The smartboard is a wonderful teaching tool. I liked how small the room was.”*

*“...it created an engaging atmosphere.”*

*“Made it easier to pay attention. Always had some sort of visual, even if only written words, to go with the teacher’s lecture.”*

### ***Student Engagement***

Students responded that they were engaged in their courses taken in the SAC CAT Classroom. For example, when asked at the end of the fall 2014 semester (n=71), 98% of students agreed or strongly agreed with: “Coming to class every day was important for my learning.” And, 61% of students agreed or strongly agreed with: “I find myself discussing outside of class with friends topics from lecture or discussion in my courses.”

Similar results carry through on the spring 2015 data. We had 101 students participating in the spring 2015 SAC CAT Classroom research, with some students having already taken courses in the classroom, which should be taken into account when considering the data. Student engagement continues to matter to students throughout the semester, as in the beginning of the spring 2015 semester, (n=101), 65% of students agreed or strongly agreed with the following statement, “In my classes, I find myself checking the time to see how much time remains before class will be over.” At the end of the semester, though, this number drops to 42% which tells us that student engagement increases through the semester in the CAT classroom.

Table 1. Student Demographics

	1st	2nd	3rd	4th	5th	grad	n/a
Fall 14 N=71	35	16	8	9	3	0	0
Spring 15 N=101	19	24	31	18	8	7	1

Similarly, when asked at the end of the spring 2015 semester (n=101), 92% of students agreed or strongly agreed with: “Coming to class every day was important for my learning.” And, 63% of students agreed or strongly agreed with: “I find myself discussing outside of class with friends topics from lecture or discussion in my courses.”

In the open-ended area of the survey, students also reported positive experiences in how the classroom helped them become and stay engaged in the course:

*“The group dynamic. Not only does it help make friends, but collaboration is important in the real world. Also, only having four tables keeps the number of students low.”*

*“I got to know people in my class a bit better.”*

*“Much more interactive than a regular classroom. Easy display of info on smartboards. Groups were fun to work with and required participation.”*

*“I like that there are so many different opportunities to have a class in here. No two classes were exactly the same, and that is so refreshing.”*

### ***Technology***

Students responded positively to the technology in the SAC CAT Classroom. In fall 2014 (n=71) in response to the question, “Using a laptop in class helps me to learn the course material” at the beginning of the semester, 68% of students agreed or strongly agreed. At the end of the semester, 87% of students disagreed or strongly disagreed with, “The laptops on the tables were NOT helpful for activities in this class.”

Additionally, when asked at the end of the semester, 83% of students agreed or strongly agreed with: “This kind of classroom was appropriate for the material we learned in this class.” Similarly, 83% of students agreed or strongly agreed with: “Compared to my level of participation in other classes, this class required me to participate more often.” Finally, also at the end of the semester, 75% of students agreed or strongly agreed with “I would like to take another class in the SAC CAT classroom.”

In spring 2015 (n=101) in response to the question, “Using a laptop in class helps me to learn the course material” at the beginning of the semester, 81% of students agreed or strongly agreed. At the end of the semester, 91% of students disagreed or strongly disagreed with, “The laptops on the tables were NOT helpful for activities in this class.”

When asked at the end of the semester, 79% of students agreed or strongly agreed with: “This kind of classroom was appropriate for the material we learned in this class.” Similarly, 84% of students agreed or strongly agreed with: “Compared to my level of participation in other classes, this class required me to participate more often.” Finally, also at the end of the semester, 74% of students agreed or strongly agreed with “I would like to take another class in the SAC CAT classroom.”

### ***Open-Ended Questions on Surveys***

We ended the survey for both semesters with three open-ended questions, allowing students to give input about the classroom in a qualitative manner. We include here the most common types of responses from students to these three questions.

#### **What did you like about the classroom?**

*“I loved having a laptop just for me every class. The round tables were nice and multiple TV screens helped everyone see what was going on. I loved being close to the front and not having 30+ people behind me.”*

*“The laptops were helpful for looking up research. Circle tables made group work easier.”*

### **What did you not like about the classroom?**

Overall, the main student dislikes were related to three reasons.

1. When the computer technology did not work correctly:

*“There were some technological problems that made class difficult at times.”*

*“From time to time, the main Smartboard wouldn’t cooperate, but we always were able to deal with it and still be productive.”*

*“I didn’t like it that sometimes the technology wouldn’t work.”*

2. The size/shape of the classroom and how that affected its functioning:

*“Having back to professor, next to bathroom (loud hand dryer).”*

*“Constantly had to crane my neck around to look at stuff, too many group activities.”*

*“I wish it was easier to see students on the other side of the room. It was hard when our tables were in a line, but it wasn’t that big of a deal.”*

3. Feeling forced to primarily do group work:

*“Not very discussion-based, communication was somewhat limited to small groups a lot of the times.”*

*“It required group work. Was uncomfortable with having my work displayed.”*

*“Too many things going on at once.”*

**After having taken a class in the SAC CAT Classroom, would you recommend this to others?**

*“Yes, I think it’s a good learning environment.”*

*“I would recommend this to others because it is a comfortable room that has developed my critical learning skills. I also talk to a lot of people about what I’m learning in class, more so than any other [classes] I’m taking. I enjoy the technology and how it is used every day.”*

*“Yes. Absolutely. It helped me learn in ways other classes can’t. I am a very hands on person, so it was great being able to actually do things. This has been one of my favorite classes, and I have learned the most out of it. I’m very glad I took this class.”*

***Student Focus Groups***

Student focus groups were held once each semester, and involved 8 students in the fall, and 15 students in the spring. These sessions were enhanced by offering students pizza and soda (provided by CETL), and again, were approved through the IRB process. Conversations mirrored the findings in the survey data, and did not add any new information. Due to the fact that UNI is somewhat of a “suitcase campus” with students spending most weekends away from campus and away from Cedar Falls, scheduling focus groups outside class times became highly problematic. We resorted to using a scheduled class time of one professor in order to hold the focus groups. Because of these difficulties in scheduling, as well as the low participation rate (11% of n=71 in f2014; 15% of n=101 in sp2015), we have revised our data collection strategies for the AY2015-2016, and will discontinue the focus groups as part of our research design, finding them not as effective as we had hoped.

***Faculty and Staff Interviews***

Sitting down to chat with faculty and staff using an unstructured interview format proved to be most useful. As this was the first year of the classroom’s operation, most conversations were limited to 30-50 minutes and focused on technology, rather than pedagogy. However, after the spring 2015 semester was well underway, faculty and staff expressed higher levels of comfort with the classroom, and made good use of the email lists and technology within the classrooms (e.g., white board) to inform one another of what did and did not work well that day



in terms of technology (e.g., blue table computers/tv fussy, have contacted IT staff about this). The interaction between faculty and staff surrounding the room increased, both through email and lunch interactions, and faculty and staff worked together to prepare training sessions for summer 2015.

We include this excerpt from Dr. Kimberly Baker, Assistant Professor of Criminology, who recorded grade performance for her Research Methods courses, which she has taught regularly in traditional classrooms at UNI and now in the CAT classroom.

Teaching in the CAT classroom has been one of the most enriching experiences I have had as a college-level educator. While I have always used activity-based and active learning pedagogies, the additional supports available in the CAT classroom have given me the opportunity to facilitate student learning in new ways. In my Research Methods class, for example, the circular seating arrangement and availability of computers has allowed me to create extended group projects that enable students to engage more dynamically and deeply with the material compared to prior semesters. The pay-off is also clear for students as the average grade in the course has increased half of a letter grade (from a B- to a B). Additionally, Research Methods is typically a course that students are reluctant to take, and the collaborative style classroom also helps improve student attitudes about the course. One of the most frequent comments I hear from students is how they cannot believe class time passes so quickly. Students are so busy learning that they do not have opportunities to get bored or to disengage from the course. I hope never to teach Research Methods in a traditional classroom again.

<b>Average grades by semester:</b>			
	Before		After
F 13, Sec 1	84.8	F 14, Sec 1	89.9
F 13, Sec 2	87.2	F 14, Sec 2	82.9
S 15	78.1		
<b>Overall Average:</b>	83.36666667		86.4

In sum, the research on the classroom was a fruitful endeavor, and we plan to continue it for AY2015-2016.

## VI. Conclusion

Preliminary findings from the AY 2014-2015 study of the SAC CAT Classroom prove to be quite positive. Although students find some aspects of the room's technology challenging, they also express great satisfaction with their learning experiences.

We coded the qualitative data broadly, using positive, negative, mixed, neutral, and n/a (collapsed as mixed/other as shown below) as our codes, asking students about their first impressions of the classroom at the beginning of the semester and whether they would recommend that their peers take a class in the SAC CAT Classroom at the end of the semester. We discovered a general positive trend that held up in both semesters, displayed here in this table.

Table 2. Responses to: "Having taken a class in the SAC CAT classroom, would you recommend this to others? Why/not?"

	Positive	Negative	Mixed/Other
Fall 2014 n=71	51 (72%)	6 (8%)	14 (20%)
Spring 2015 n=101	72 (71%)	11 (11%)	18 (18%)

As you can see, in fall 2014 72% of students taking classes in the SAC CAT classroom who participated in the research had a positive response to the classroom, indicating that they would recommend this classroom to another student. Additionally, in spring 2015, 71% of students had a similarly positive response to the classroom.

Moreover, if students' initial impression of the room was positive, the vast majority remained positive at the end of the semester. If their initial impression was negative, mixed or neutral, many of those students completed their classes feeling positive about the classroom.

Table 3. Positive beginning of the semester impression to end of the semester recommendation

POSITIVE TO....	F2014 n=71	Spring 2015 n=101
Positive to negative	1	4
<b>Positive to positive</b>	<b>25 (35%)</b>	<b>36 (36%)</b>
Positive to mixed	6	6
Positive to other	2	1

Approximately half of the students in each semester who thought positively of the room at the beginning of the semester continued viewing the room positively and would recommend the classroom to their peers. And, as the tables below reveal, 36% of students who began the semester with negative, mixed, neutral or N/A views of the classroom ended the semester with a positive view of the room.

Table 4. Negative beginning of the semester impression to end of the semester recommendation

NEGATIVE TO....	F2014 n=71	Spring 2015 n=101
Negative to negative	1	4
<b>Negative to positive</b>	<b>8 (11%)</b>	<b>6 (6%)</b>
Negative to mixed	1	4
Negative to other	0	0

Reasons for the shift in attitude suggest an initial dislike of the technology or the room's focus on group interactions. One student suggested at the beginning of the semester that the room was *"disorganized"* and that it *"met minimal requirements for a classroom while focusing on technology that was unnecessary for the function of a class."* By the end of the semester, the same student would recommend the classroom to a peer because *"it was a fun/different way to learn. Talking with peers really helps to broaden your own understanding of the topic."* Another student's initial reaction to the room was *"hate it."* By the end of the semester, that same student would *"absolutely"* recommend the room to a peer because the room *"keeps you involved in the class and I don't see any class subject that this technology wouldn't help."*

Table 5. Mixed beginning of the semester impression to end of the semester recommendation

MIXED TO....	F2014 n=71	Spring 2015 n=101
Mixed to negative	4	1
<b>Mixed to positive</b>	<b>14 (19.7%)</b>	<b>8 (8%)</b>
Mixed to mixed	3	2
Mixed to other	2	0

Students who began the semester mixed but ended positive were unsure of what to make of the technology. One student's initial impression was that the room was *"very different, nervous being in circle groups, but I love it now"* and by the end of the semester stated that the room *"...made it easier to learn."*

Table 6. Neutral beginning of the semester impression to end of the semester recommendation

NEUTRAL TO.....	F2014 n=71	Spring 2015 n=101
Neutral or N/A to neutral	0	2
<b>Neutral or N/A to positive</b>	<b>4 (5.6%)</b>	<b>22 (22%)</b>
Neutral or N/A to mixed	0	2
Neutral or N/A to other	0	3

Students who were neutral about the room—*It was fancy/different*” or *“Different-computers on round tables vs. normal desks and much smaller class size”*—said by the end of the semester that they would recommend the room because it is a *“great, interactive way to learn”* and *“It was by far my favorite classroom and I really think it helped me learn more than if it were in a standard classroom with a small desk.”*

## **VII. Recommendations**

Given students’ positive learning experiences in the SAC CAT Classroom, we make the following recommendations:

- A. **Continue developing more, and bigger, CAT Classrooms on UNI’s campus.** Over 30 faculty have been trained in the pedagogy and technology of the SAC CAT Classroom, and there are not enough instructional times for all of these faculty to teach in the room—costs could be reduced by not including a SMARTboard in the classroom design, for example. The SAC CAT Classroom only holds 24 students, and some faculty who would like to teach in the room face challenges because they usually teach classes with more students: most LAC courses, for example, enroll more than 24 students. Similar kinds of spaces will be available in the newly renovated Schindler, and one of the IT Studios in the ITTC is currently being retrofitted for CAT use for 36 students. As buildings on UNI’s campus are renovated, we hope that those planning renovations will develop additional, larger CAT Classrooms. The first classrooms of this type were developed in the US in the early 2000s, and to continue to provide our students quality classroom pedagogy, we recommend the implementation of these types of classrooms for students across the university.
- B. **Earmark funds for CAT Classroom Training.** Continue to support quality teaching/pedagogy with technology and face-to-face classroom interaction with technology by dedicating funds to continued training in the CAT classroom. We have

developed a “train-the-trainer” model for the CAT classroom. Those faculty who train others should receive a small stipend for doing so. In addition, we believe that it is important to continue to build community among the faculty who teach in the room so that they can share ideas, pedagogical strategies and technological information. There are minimal expenses attached to CAT classroom training—lunches during training and for meetings once a semester, and faculty facilitator stipends—but who pays for those expenses is unclear. In the past, both the Provost’s Office and the CETL have paid for these expenses. In the future, it should be clear who is responsible for paying for such expenses.

- C. **These classrooms teach “soft skills” for the future workforce.** National hiring trends demonstrate that soft skills, or “people skills” are what employers expect their new hires to possess. The over-reliance on daily technology (e.g., mobile phones, computers, online education) has reduced the skills needed in personal interaction among the student population nationwide. Smaller classes and those structured like the CAT Classroom ensure personal interaction between students, and professor-student interaction, both highly needed in today’s future work population.

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## APPENDIX A: STUDENT SURVEY FOR BEGINNING OF SEMESTER

### 1. Beginning-of-Semester Survey for Students in the SAC CAT Classroom

Name: \_\_\_\_\_

Course: \_\_\_\_\_

Section: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone  
number: \_\_\_\_\_

\_\_\_\_\_ Yes, I am interested in participating in a focus group discussion about the SAC CAT classroom. Please contact me about this—I realize that I can still choose to not participate even though I have checked this option.

\_\_\_\_\_ No, I am not interested in participating in a focus group discussion about the SAC CAT classroom. Please do not contact me about this.

If answered Yes,

Focus Group Sessions will be scheduled for 5pm on weekday evenings. Please circle which evenings work best in your schedule during a regular week:

Monday

Tuesday

Wednesday

Thursday

Friday

**Directions: For each question, please provide the answer that is most appropriate.**

1. What is your year in school? (e.g., first year, third year, etc.) \_\_\_\_\_

2. What is your gender? (woman, man, transgender) \_\_\_\_\_

3. What is your major? (if haven't declared yet, write "deciding") \_\_\_\_\_

4. What are your first impressions of this classroom?

5. Why did you decide to take this class?
- a. It is a requirement.
  - b. It is an elective.
  - c. Other \_\_\_\_\_
  - d. Unsure
6. I am interested in taking this class.
- a. Strongly Agree
  - b. Agree
  - c. Disagree
  - d. Strongly Disagree
7. In general, group activities in class help me to learn.
- a. Strongly Agree
  - b. Agree
  - c. Disagree
  - d. Strongly Disagree
8. Using a laptop in class helps me to learn the course material.
- a. Strongly Agree
  - b. Agree
  - c. Disagree
  - d. Strongly Disagree
9. The physical layout of this room is helpful for interacting with other students and the instructor.
- a. Strongly Agree
  - b. Agree
  - c. Disagree
  - d. Strongly Disagree
10. I am given opportunities to develop my critical thinking skills in my UNI courses.
- a. Strongly Agree
  - b. Agree
  - c. Disagree
  - d. Strongly Disagree
11. In my classes, I find myself checking the time to see how much time remains before class will be over.
- a. Strongly Agree
  - b. Agree
  - c. Disagree
  - d. Strongly Disagree

12. In my classes, I am surprised when the class ends because the time seems to have flown.
- a. Strongly Agree
  - b. Agree
  - c. Disagree
  - d. Strongly Disagree

**Thank you for your time.**

## **APPENDIX B: STUDENT SURVEY FOR END OF SEMESTER**

### End-of-Semester Survey for Students in the SAC CAT Classroom

Name: \_\_\_\_\_

Course: \_\_\_\_\_ Section: \_\_\_\_\_

Directions: Please select one answer for each question by circling the answer that is the most appropriate.

1. Group activities in this class helped me to learn the material that we were supposed to learn.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

2. The wall-mounted monitors were useful for learning in this class.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

3. Sitting at round tables was helpful for group activities.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

4. The laptops on the tables were NOT helpful for activities in this class.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

5. I was comfortable using one of the room's laptops to display my work on a wall-mounted monitor.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree
- e. We did not use laptops to display our work on the wall-mounted monitors.

6. The smartboard was useful to my learning and engagement in class.

- a. Strongly Agree

- b. Agree
- c. Disagree
- d. Strongly Disagree

7. This kind of classroom was appropriate for the material we learned in this class.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

8. How often were there problems with technology that interfered with activities in this classroom?

- a. Very frequently
- b. Frequently
- c. Seldom
- d. Never

9. If/when there were technology issues, what did the professor do to manage them?

- a. Resolved the issue themselves
- b. Asked students for assistance
- c. Contacted someone from the technology staff
- d. Changed the course plan for that day (e.g., "Ok let's do something different" and then did not use that technology again).
- e. Other (describe here): \_\_\_\_\_

10. Coming to class every day was important for my learning.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

11. Compared to my level of participation in other classes, this class required me to participate more often.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

12. When you consider this class, were you more or less interested than you are in other classes?

- a. Less interested
- b. More interested
- c. About the same

13. Did you participate in more or fewer group activities in this class than in your other classes?

- a. More group activities in this class
- b. Fewer group activities in this class
- c. About the same
- d. Not sure

14. I would like to take another class in the SAC CAT classroom.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

15. I was given opportunities to develop my critical thinking skills in my UNI courses.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

16. In this class, I found myself checking the time to see how much time remained before class will be over.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

17. In my classes, I was surprised to find the class ending because the time seemed to have flown.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

18. I find myself discussing outside of class with friends topics from lecture or discussion in my courses.

- a. Strongly Agree
- b. Agree
- c. Disagree
- d. Strongly Disagree

19. What did you like about this classroom?

20. What did you not like about this classroom?

21. After having taken a class in the SAC CAT classroom, would you recommend this to others? Why/not?

**Thank you for your time.**



## **APPENDIX C: STUDENT FOCUS GROUP QUESTIONS**

### Focus Groups with Students

1. What were the advantages and disadvantages of being in the SAC CAT classroom? Why do you think so?
2. Was the course material a good fit for being in this classroom?
  - a. If yes, why?
  - b. If no, why not?
3. Did you have any problems with using the laptops or the wall-mounted monitors in class?
4. Describe any problems with using the laptops in class.
5. Describe any problems with using the wall-mounted monitors in class.
6. Were your activities outside of class (homework and major assignments) different than the activities outside of other classes?
  - a. If yes, how?
  - b. If no, why not?
7. Were you prepared to use the technology in this room, or would you have liked some training in how to use the room?
8. Were there any technology difficulties in the SAC CAT classroom during your class? If so, how were these difficulties resolved?
9. Is there anything about the SAC CAT classroom that we have not yet discussed that you feel is important?

**Thank you for your time.**

## **APPENDIX D: INTERVIEW QUESTIONS FOR FACULTY AND STAFF**

1. Which course are you teaching in the SAC CAT classroom this semester?
2. Please describe the goals of the class.
3. How did you hear about the SAC CAT classroom?
4. Why did you decide to teach this class in the SAC CAT classroom?
5. What kinds of technology do you regularly use in your teaching?
6. Do you prefer certain kinds of technology in your teaching?
7. Do you think technology can ever impede the learning process? If so, why?
8. How are you planning to use the SAC CAT environment in your class?
9. Does the technology in the SAC CAT classroom meet your needs, or do you have needs that it does not meet? Could you please elaborate on your answer?
10. In what ways has the SAC CAT Training prepared you to teach in this classroom?
11. Is there anything about the SAC CAT classroom that you want to tell us that we have not asked about?