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This chapter explores whether a new learning space, designed to be more like a café than a classroom, provides an environment that facilitates active and collaborative learning.

Coffeehouse as Classroom: Examination of a New Style of Active Learning Environment

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Indiana University's newest experimental classroom, the "Collaboration Café," was designed to facilitate active and collaborative learning while also exploring a new classroom design that shares café-style characteristics. The room includes limestone accents, plentiful natural light, and brightly colored seating (Lei 2010). There are high and low bistro-style tables at the center, booths, and soft sofa seating clustered around small coffee tables (see Figures 4.1 and 4.2). The technology in the room includes multiple projection possibilities and collaborative tables that support the sharing of laptop images on video monitors, as well as access to six or more PCs and a networked printer, all to facilitate student engagement with course materials and each other. Unlike other active learning classrooms, the design of the Collaboration Café does not assume any particular pedagogical approach; rather, the space is intended to provide a flexible, technology-rich, collaborative space for faculty to use in whatever ways best enable them to achieve their instructional goals.

Why We Conducted the Study

The overarching goal of this study was to understand how instructors were using this experimental classroom and whether this new style of classroom provides an environment that facilitates active and collaborative learning.

Method

The following sections provide details regarding the subjects of this study, the research instruments used, and our data collection methods.

Figure 4.1. Students Working at Their Tables on an Assignment

Source: Photograph by the Trustees of Indiana University.

Figure 4.2. Student Team Consulting with Their Professor

Source: Photograph by the Trustees of Indiana University.

Participants. During the fall 2012 semester, ten instructors taught fifteen classes in the Collaboration Café (Cedar Hall 102). The classes varied in both type and focus (that is, Introduction to International Studies, Telecommunications, Spanish Language Pedagogy, English, Statistics, Folklore, and History) and had a total of 372 students enrolled.

Instrument and Data Collection Description. Mixed methods research that meaningfully integrates qualitative and quantitative approaches can result in the enrichment of both data types and "provide stronger evidence for a conclusion through convergence and corroboration of findings" (Johnson and Onwuegbuzie 2004, 21). Video data, in particular, can serve as an effective means of exploring the validity of subjective accounts of learning and instruction activities (Jordan and Henderson 1995; Rosenstein 2002; Stigler, Gallimore, and Hiebert 2000). For these reasons, a "convergent parallel" mixed methods design (Creswell and Plano-Clark 2007) was chosen for this study, triangulating faculty reports of classroom behaviors with quantitative and qualitative survey assessments of student perceptions and surveillance video of actual classroom behaviors.

Daily Usage Checklist. This instrument was used to ascertain if the classroom environment helped faculty to accomplish their instructional goals, and asked what equipment they used and what was used by students during class.

Room Surveillance Video. Because the classroom serves as both a classroom and a Student Technology Center (STC), for security purposes, four surveillance cameras with fixed viewpoints were permanently installed. These cameras provided video-only observation data that were used for coding the classroom activity. A coding protocol was developed in iterative attempts to describe classroom behaviors and broadly characterize classroom interactions and technologies used. Observations made over the course of the fall 2012 semester were reviewed in order to assess the relative stability of patterns over time.

Student Survey. A quantitative and qualitative student survey that focused on classroom space and activities was sent to all 372 students who took a class in fall 2012 in the Collaboration Café. As an incentive, students were entered into a $50 Visa gift card drawing for completing the questionnaire, which yielded a 48 percent response rate. The usual gender bias occurred with a higher percentage of females (52 percent) responding than males (35 percent); however, students of color had a higher response rate (50 percent) than the white students (43 percent). Chi-square and mean tests were performed to see if there were differences by gender or race; however, no statistical significant differences were found (see Table 4.1).

Faculty Interviews. To obtain a richer understanding of faculty approaches to teaching in this space, and their retrospective perceptions, all instructors were invited to participate in interviews. Five faculty members agreed to share their experiences and were asked four questions, three of which were parallel to the items asked in the student survey.

Table 4.1. Student Responder Nonresponder Comparison by Demographics

	Nonresponder		Responder	
Gender				
Female	106	48%	116	52%
Male	98	65%	52	35%
Ethnicity				
White	148	57%	113	43%
Nonwhite	56	50%	55	50%
Total	204	55%	168	45%

1. Please describe one situation in which this room WORKED WELL for you. Provide as many details as possible.
2. Please describe one situation in which this room DID NOT WORK WELL for you. Please provide as many details as possible.
3. What are your overall thoughts about teaching in the Cedar Hall 102 classroom?
4. Please describe how your approach to designing class activities in CH 102 differed from how you typically have approached designing class activities in more traditional classrooms.

Key Findings

In this section, we report on our major findings regarding the impact of the space on faculty-student collaboration; the evaluation of the room design, furniture, comfort, and overall feel; and the use of technology in the room.

Faculty and Students Overwhelmingly Felt That the Space Was Conducive to Collaboration. Students reported high levels of student-faculty and student-student interaction. Approximately 70 percent reported interacting with the instructor during an in-class learning activity at least once a week, while 80 percent of respondents reported that the instructor consulted with groups of students during an in-class learning activity. A smaller percentage of students, 74 percent, reported that an in-class learning activity required students to explain course ideas or concepts to other students; however, 93 percent of responders agreed or strongly agreed that the space facilitates multiple types of learning activities, which is supported by the checklists, faculty interviews, and video.

In addition, 86 percent of students agreed or strongly agreed with the statement that the Collaboration Café makes it easier than a traditional classroom to collaborate with classmates. A smaller percentage of students, 67 percent, agreed or strongly agreed with the statement that they participated more than they do in a traditional classroom.

Students overwhelmingly felt that the space was conducive to group work and discussions. These were the most frequently cited modes of

interaction in survey open-ended questions, with the majority of participants making one or more explicit references to the enhancement or support of "groups, collaboration," and/or "discussion." Students also felt that presentations and group presentations were well supported by the room.

Another enhanced form of interaction cited by students was peer-to-peer social connecting (as opposed to strictly class-related interaction). Students reported feeling "more connected" and having a "better sense of community" than they would in traditional classrooms; however, a few students reported feeling that discussions and social connectivity were negatively impacted by the space. In particular, the design of the room and the variety of discrete learning spaces (that is, small tables and booths that orient students toward one another) were seen to segregate the class into distinct subsets, thus decreasing interactivity among the class as a whole.

Consistent with these findings, discussion was reported as the most widely used instructional method; however, there were sometimes significant discrepancies with what we observed on the video. Specifically, some faculty reported engaging in class-wide discussion, when observation of the video indicated that the class was almost entirely lecture based, with only brief and infrequent contributions from students. In addition, some faculty reported that students shared work during class, but we were unable to find any observable corresponding behavior on video, calling into question how "sharing of work" was being interpreted.

Finally, even though the classroom was widely cited as lending itself to collaborative activities, more than 50 percent of the responses to the daily usage checklist indicate that faculty were using lecture during class, which was corroborated by observations. We also observed many classes exhibiting a general front-back orientation by virtue of the location of the large projection screen and whiteboard surface on the west wall of the room, and the nearby instructor lectern.

Design of the Room and Furniture Received Mixed Reviews from Faculty and Students.   While 81 percent of the students reported that the classroom environment was more conducive to learning than the traditional classroom design, reviews of the size of the room were more ambivalent than reviews of other qualities cited by students. For example, one student who felt that the size of the room was problematic also said, "I liked it a lot because I had more freedom to spread out my belongings/computers and such." The classroom is 1,614 square feet and seats 49 students; using standard university guidelines, a classroom of that size would typically seat between 64 and 80 students. More often than not, the spaciousness was seen as a benefit, but there were a number of students who evaluated the size of the room negatively. One student shared that "during class, there are times when the room is too large to adequately create an environment of collaboration and community." Another negative evaluation addressed problems an instructor sometimes had with hearing students in the large space.

Table 4.2. Preferred Seating

	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
The soft cushioned chairs (either design)	44%	33%	15%	6%	1%	0%
The short tables	39%	38%	13%	7%	3%	0%
The tall tables	10%	17%	38%	8%	8%	19%
The computer desks along the wall	2%	3%	10%	38%	23%	24%
The booths with the computer monitors	1%	5%	12%	23%	43%	16%
The corner couch	2%	4%	13%	19%	21%	41%

A clear majority of students found the mobility and flexibility inherent in the design of the room to be beneficial. One student reported that "being able to move the tables and chairs around has made a HUGE difference in group work for my class that meets here. I participate a lot more because of this."

The generous space also allows instructors to create a variety of grouping arrangements. Instructors reported regularly creating groups of varying sizes—from multiple small groups of three or four students to circular whole-class configurations. Several faculty members pointed out that while their approach to using groups was not fundamentally different as compared with other classrooms, the qualities of mobility and flexibility inherent in the space meant that the implementation was much easier. Moreover, some instructors perceived that the quality of group work undertaken was better than what they observed in course sections they taught in other spaces.

The students were asked to rank order their seating preferences. Consistent with the findings above, the soft cushioned chairs and short tables were clearly preferred over the other furniture arrangements in the room (see Table 4.2), potentially for the ease in moving them around the room.

Instructor interaction with groups and/or individuals during designated group activity was also perceived to be enhanced by the physical characteristics of the room. Respondents noted that the spaciousness of the room and the ability of students to easily configure themselves into groups throughout the room allowed them to easily navigate among groups and join in small group discussions at the same "level" as the other participants. To highlight the significance of these points, one instructor noted that traditional classroom spaces make accessing groups difficult and require "towering" over students in a way that negatively impacts interactions. A few reports suggested that students did perceive this difference in the room. One student noted that the room "provides an atmosphere where our teacher can sit and talk with us in a more informal, equal (way)." Another noted that the room provides a "relaxed environment that makes it more comfortable to converse with the professor and other students." Other students

also felt that the room enhanced group discussions with peers. One student noted that sitting at tables that automatically create groups "fosters a more comfortable environment for group discussion," while another said that the room "is much more casual, and turns a lecture into a conversation."

Faculty and Students Rated the Space Very Positively with Respect to the Comfort and Overall Feel of the Classroom. With few exceptions, students gave positive overall evaluations of their experiences in the room. When provided, the reasons for their positive feelings about the space were wide-ranging, but clearly, most students "like, love," or "enjoy" their time in the classroom.

Instructor-interview responses suggested that student comfort was an important contributor to making groups "work better" in the classroom. A significant number of students (approximately one-third of all respondents) made explicit references to feelings of comfort and/or relaxation, and thereby seemed to confirm that comfort positively impacted discussion activity. Interestingly, some responses addressing the comfortable nature of the space specifically made reference to reductions in stress and anxiety, noting that the space was "stress free" and that "the cozy atmosphere . . . takes the anxiety out" of class meetings.

Another finding that came to light in the student data that was not directly addressed in the instructor interviews was that "comfort" also had an impact on alertness, concentration, and/or the general level of activity in the room. Students claimed that the relaxed atmosphere "makes it easier to concentrate" and "keeps [them] awake." One student shared that the room "feels like a cross between a big living room and a classroom, which helps me focus." With respect to possible reasons for the space having an effect on alertness, several students made some reference to the novelty of the space, contrasting it with "traditional" classrooms and characterizing the overall design as "modern." Interestingly, one student noted that while she was very pleased with the space, her first encounter with the room was problematic. She said, "I walked in and didn't know what to do. I didn't know where to sit." The room seems to disrupt pre-existing schemas for what a classroom should be, thereby capturing students' attention.

The majority of references to the qualities of light in the room and to the windows, explicitly, were quite positive. Students reported that "the lighting is great," that they "love the lighting," and that "all of the natural light from the windows . . . makes the room feel more vibrant and keeps me alert." Multiple instructors noted their appreciation of the amount of natural light available in the room.

With the Exception of the Projector, the Technology in the Room Was Not Used to Significant Effect. On the open-ended items on the student survey, "technology" was primarily referenced in a generic, abstract way, and was evaluated very positively by students. Students perceived the space to be "very technologically advanced," and held it to be a valuable resource. When students did specify benefits of technology, or specific

Table 4.3. Student Reported Helpfulness of Technologies

Reflecting on the various technologies in the room, how helpful were these tools in learning the course material?

	Not Helpful	Somewhat Helpful	Helpful	Very Helpful
Projector	5%	3%	26%	66%
Interactive whiteboard	20%	16%	31%	34%
Portable whiteboards	30%	16%	27%	27%
Whiteboard camera	30%	21%	22%	26%
Computers in booths	31%	20%	22%	27%
Computers along wall	22%	14%	27%	37%

technologies, they were most often associated with visual displays (projectors and various whiteboards) and/or presentation activities. Students felt presentation activities were very well supported by the "technology" in the room. Mobile whiteboards used to present group work to the whole class were singled out for praise several times. These findings are generally consistent with what the students reported on the closed-ended survey question (see Table 4.3).

During video observations, use of projectors was clearly the dominant form of technology used. Interestingly, there was no observed use of the room's copy camera captured on video.

Also consistent with what was reported on the student survey and checklists, use of the interactive whiteboard was neither frequent nor consistent but was regularly used as a standard whiteboard and as a projection surface. Reports of interactive whiteboard use indicated that use was infrequent and that costs (in terms of the effort required to master the technology) outweighed perceived benefits. One instructor shared that, while an imperfect solution, it was easier to capture what was written on the board with a camera. During analysis of video data, both students and instructors were observed to occasionally use cameras to photograph whiteboards (including mobile whiteboards).

Looking across the courses, analysis of the video suggested that while patterns of technology use in specific courses remained stable across the semester, there were clear differences in technology use between instructors. For example, one course made regular use of mobile whiteboards while in another course, the instructor often used a document camera to project written text. Consistent with what the students reported and what was reported on the checklists, the dominant technologies observed in the classroom were projectors (most frequently projecting text) and whiteboards, in addition to mobile devices supplied by the students themselves (in the form of laptop computers and a variety of handheld devices).

Furthermore, the video indicated that mobile devices use appeared to serve both as an integrated part of class activity and as an impediment or

alternative to class activity. In classes clearly utilizing group work, laptops frequently served as observable resources for those groups. By contrast, individuals and small groups could be observed to clearly "check out" of class activity with texting and other "incongruent" laptop use in some courses.

Finally, the interview data indicated that instructors felt that they had not been able to fully take advantage of available technologies, for a variety of reasons; however, they tended to perceive the available technologies as (missed) opportunities.

Faculty Development

Prior to the start of each semester, the Center for Innovative Teaching and Learning (CITL) and Classroom Technology Services offer orientation sessions for instructors scheduled to teach in the Collaboration Café. Because this room was designed to support and encourage collaborative learning in small- to mid-sized classes, rather than to significantly transform large-class pedagogies like SCALE-UP and TILE rooms (Van Horne et al. 2012), there is no requirement to attend the orientation sessions, although most instructors do participate in these sessions.

The CITL continues to search for effective faculty development approaches for this classroom that provide instructors with opportunities to learn about the room and to build a sense of community to share pedagogical experience among instructors. To accomplish this goal, a formal Faculty Learning Community (FLC) may be initiated to provide structure and incentive to explore best practices in the room and encourage collaborative Scholarship of Teaching and Learning projects. Video-based faculty spotlights may also be used to build a library of mini case studies about teaching in the Collaboration Café classroom.

Summary and Key Takeaways

The majority of the benefits of the room are associated with the nontraditional "café" atmosphere.

1. The spaciousness of the room was viewed as enhancing collaborative activities, but care needs to be taken to ensure that the space is not too large for the number of students in the class.
2. The abundance of natural light and comfortable seating was appreciated by faculty and students and viewed as making the environment more conducive to learning.
3. There were clear preferences for furniture that is easily movable rather than fixed furniture arrangements.
4. The technology in the room, while appreciated by students and faculty, was not used to a significant extent with the exception of the projector. There appears to be a clear "learning curve" regarding

technology utilization for the room, both for specific tools and for broader incorporation of technology, pedagogically.

The results of this study indicate that instructors using this room do not significantly change their teaching approaches; rather, the instructors who self-select to teach in this room typically are seeking a classroom environment that better supports their instructional practices.

Returning to the question of whether the design of the classroom provided a setting that enhanced teaching and learning, it seems that the answer is yes, but not without deliberate, intentional planning for different (nontraditional) kinds of interactions. Instructors who made the most effective use of the classroom had a plan for utilizing available features/technologies, as evidenced by a clearly structured sequence of interactions and technology uses being implemented on the first day of classes. In other words, there was an a priori intention, rather than a gradual evolution, regarding classroom utilization.

For the Collaboration Café, faculty development opportunities should continue to focus on support for exploratory teaching, rather than formal programs designed to promote large-scale pedagogical transformations.

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