Learning Environment Evaluation Project

University of Lethbridge Teaching Centre

Fall 2012

Executive Summary – Room L 1050

March 2013

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as part of the Teaching Centre Learning Environment Evaluation (LEE) Fall 2012

Mar 5th, 2013

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Part 1: Room Use and Teaching Activities

L1050 is a rectangular 30'x44' room that accommodates 60 students (as per University calendar). During the fall 2012 data collection, it was typically configured in 4-5 rows with approximately seven trapezoidal tables per row. The rows were aligned with the long side of the room. There were two doors at the front of the room. There were two large whiteboards located at the front of the room, separated by a structural support pillar. There was another whiteboard on one short side of the classroom. Hanging light rows were suspended approximately 26" from the ceiling and were oriented perpendicular to the rows. The light was 70% indirect (i.e., shining upwards and reflecting into the room) and 30% direct (I.e., shining downwards). 4-way light switches were located to either side of the room by the entrance doors. Walls were painted in a neutral shade of white. The workstation was located at the front of the room, close to the right-hand door. The workstation contained a Crestron© control panel, desktop monitor, and slide-out keyboard, as well as AV equipment. The projector was suspended from the centre of the ceiling and projects onto a screen (62" wide by 46'' high) that was retractable from the centre of the front area (covers right-hand side of whiteboard next to pillar). Ventilation outlets were located in the ceiling throughout the room. The thermostat was located by the north door. Audio speakers were located throughout the ceiling.

As part of the Learning Environment Evaluation (LEE) research project in the fall of 2012, a total of 153 students participated in the classroom survey in L1050. This classroom was observed on twelve instances by three independent observers. A total of six respondents participated in two student focus groups in this classroom. Three out of four faculty agreed that L1050 was a fairly effective learning space (faculty survey). Different teaching styles were feasible and practically achievable. Many instructors relied on classroom technology in their teaching activities, such as power point presentation using a projector, while others followed a more traditional way, such as lecturing and oral discussion without frequent use of projection or electronic resources. Although the projection screen was small, the observers noted that the image was clear enough to read from the back row. Many instructors who relied heavily on the whiteboard frequently adopted traditional lectures. The front whiteboard was repeatedly used and cleaned for re-use within the same class period. Whiteboards on the sides were utilized less by instructors and mainly employed by students during group work. Writing on the whiteboard appeared clear to the observers from the back row; however, observers noted that lower portions of the front whiteboard were abandoned because of the tall workstation, which partly obscured the board. Observers reported sufficient lighting with easy switch control. Observer also consistently reported good sound quality, good air quality and satisfying acoustics. For group work, students were able to group themselves without reconfiguring the desks; they had enough desk space and enough space for movement between rows. However, space was not enough to let the instructors wander between all the groups. Extra desks were observed to be empty during different classes. Students occupied desks in a random mode; observers have recorded approximate numbers of students who sat in different section of the room. Group discussions were feasible in L0150. However, some instructors sent students to

the breakout rooms near L1050 for more effective group work. Generally, the room appeared to work well for different instructors with different teaching styles.

Part 2: Student Perspective

General Remarks
When asked to rate their general feeling towards the room on a scale of 1 ("I love it") to 5 ("I hate it"), roughly half the students answered that they liked the room (43.1%, student survey). The other half of students felt neutral towards the room (40.5%). Interestingly, over 10% of students disliked the room (13.1%, student survey). A vast majority of students agreed that the classroom provided an effective learning space (86.9%, student survey), and the majority of students also agreed that the room facilitated learning activities (70.6%, student survey) and engagement (77.1%, student survey). These data were supported by individual student accounts during focus groups (Nov 23, Nov 30). The remaining students disagreed with those statements. Students largely found the room physically comfortable (75.8%, student survey). In the following, details about physical comfort of the room as evaluated by the students are discussed.

1. Physical Factors

1.1 Lighting
A majority of students surveyed reported being satisfied with the lighting in the room (84.3%, student survey). Some students noted that the room was well-lit, but also commented on the lack of adjustability of the lights in a front-back fashion and being stuck to the "string" fashion (student focus group Nov 23). Several students commented on preferring natural light, but also favouring the indirect light in the classroom over direct light (student focus group Nov 23, Nov 30). Natural light was described as "more positive" (student focus group Nov 30).

1.2 Sound
Nearly all students were satisfied with the sound quality in the room (94.7%, student survey), which includes a high proportion of students being *very* satisfied (44.4%). The noise level was also rated as satisfying, indicating absence of distracting noise (79.7%, student survey). It was observed that when students are talking in the classroom, it was difficult to hear others at the front (obs. 01 Sep 26). Without noise in the room, questions were heard clearly from the far ends of the room (obs. 01 Nov 26, obs. 02 Oct 03, obs. 04 Sep 25). A student commented that sometimes the room had an echo, but was still overall satisfied with the sound quality (student focus group Nov 23). Noise was described as a problem when people were in the hallway outside the classroom (student focus group Nov 23, Nov 30). The observers noted independently that doors were not always closed and noise from outside was disruptive when they were left open (obs. 02 Oct 22). It was also noted that students leaving and re-entering the classroom was disruptive to the class (obs. 02 Nov 26). On several occasions, noises from above the classroom were observed (obs. 01 Sep 26, obs. 05 Nov 29).

1.3 Climate
A majority of students were satisfied with the room temperature (77.1%, student survey) and air quality (93.5%, student survey). One student described the climate as "hit and miss," indicating that the temperature regulation was sometimes too extreme (student focus group Nov 23). It was observed that often students left on their jackets on in the room or put them on during the course of the class (for example, obs. 01 Sep 26), sometimes to take them off later (obs. 03 Nov 27).

2. Room Configuration and Furniture

2.1 Layout and Furniture
Survey responses indicated that two thirds (66%) of students were satisfied with the room configuration (student survey). A similar percentage of students were satisfied with the furniture (64.8%, student survey). Students reported that there were too many people in the room and one had "no set personal space" (student focus group Nov 23). Students also reported that this classroom was not suitable for group work, because the room was set up for a lecture, and changing the tables took too much time (student focus group Nov 23). Several classes made use of the breakout rooms for group work (student focus group Nov 30). One student mentioned that the doors of the room should be on the back wall to avoid distraction from latecomers (student focus group Nov 23). When asked to change one thing, students reported preferring a tiered room (student focus group Nov 23) similar to PE 250 (student focus group Nov 30). Students liked the chairs (student focus group Nov 23, Nov 30).

2.2 Sightlines and Colour
Sightlines were an issue for less than a third of the students (29.4%, student survey). However, a student noted that depending on seating location in the room, the rows of lights interfered with viewing the projection screen (student focus group Nov 30). Several students remarked that the professor was "always stuck to writing notes on the far side of the whiteboard" due to the placement of the screen, and that the whiteboard area by the workstation got most heavily used (student focus group Nov 23, Nov 30). Another student was wondering about the necessity of the pillar and the placement of the whiteboards on the short wall (student focus group Nov 23). It was observed that it was difficult to see notes on the lower portion of the whiteboard due to the desktop monitor and students' heads blocking that space (obs. 04 Nov 27, obs. 05 Sep 27, Oct 18).
Students were largely satisfied with the wall colour (77%, student survey). Data from the focus groups indicated that wall colour seems to be a personal preference. For example, a student welcomed the non-distracting, plain walls, and described that this "school-colour […] gets you into a certain mindset" (student focus group Nov 23). Another student disliked the plain tone of the wall-colour (student focus group Nov 23). A third student preferred the rooms in Markin Hall that are a blue or brown colour (student focus group Nov 30). Everyone agreed that the walls should not be grey concrete (student focus group Nov 23, Nov 30). Overall, the room's aesthetics were described as "plain," "bland," "non-distracting," and "neutral" (student focus group Nov 23, Nov 30).

3. Technology

The students reported that the projection screen was too small (student focus group Nov 23, Nov 30). The students also acknowledged the lack of plugins/outlets for laptops (student focus group Nov 23). Students liked the ample whiteboard space (student focus group Nov 30), but some were unsure as to how the whiteboards on the short walls would be utilized (student focus group Nov 23, Nov 30). Student presentations were common for courses in this classroom (see for example obs. 01 Oct 22, Nov 26, obs. 03 Sep 25, Oct 16).

Part 3: Faculty Perspective

General Remarks
A total of four faculty members were interviewed. Classroom observations took place at twelve different occasions as outlined above. Two faculty members participated in a faculty focus group. Faculty members had varying perspectives on L1050 as a teaching space. On a Likert scale from 1 ("very satisfied) to 4 ("very dissatisfied"), the mean response on perceiving the room as an effective learning space was 2.5 (range 1-3; faculty survey). Similarly, the mean response indicated that L1050 was considered a space that facilitated different teaching activities. Two faculty members disagreed and two agreed that student engagement was facilitated (faculty survey). On discussing these answers with respondents, faculty members revealed both negative and positive aspects of different features that this learning space offered.

1. Physical Factors

1.1 Lighting
Lighting was rated differently among instructors. The mean satisfaction with lighting control and lighting quality was 2.25 on a 4-point scale, where three faculty members were satisfied (range 3-4) and one faculty member was very dissatisfied. The issue of glare on the whiteboard was noted. Specifically, reflections from the lights created a glare and made it harder to see from the back row. The fact that the lights were oriented perpendicular to the whiteboard may have contributed to the glare issue. Some instructors were satisfied with the lighting control; others considered it confusing, especially because lights are controlled in two places in the room. Instructors observed that there was no specific lighting for the board; one of the instructors commented that "this room needs lighting in the front to light up the board", while another said "You need to dim the first set of lights and leave it bright in the back to reduce glares on the whiteboard." When asked about their ideal classroom, instructors suggested setting up an option for brighter or dimmer light toward the front projector, and installing lights with better reflection to reduce glares.

1.2 Sound

Instructors were fairly satisfied with sound quality. Professor-to-student as well as student-to-student sound quality were rated unequivocally as satisfactory (mean of M=2, range 1-2), and there was no specific complaint about acoustics in L1050. While three instructors were generally satisfied with the noise level, one instructor was dissatisfied. This instructor commented that the "noise level can be distracting," "not a sound tight room when doors are shut," "if doors are closed, it can still be noisy, I can still hear the noise from the students outside." The classroom observers independently observed this as well.

1.3 Climate
Regarding temperature control, instructors' perspectives were somewhat contradictory; two faculty members were satisfied, while the other two were dissatisfied (mean of M = 2.5). A dissatisfied instructor stated: "Temperature control: sometimes very cold, sometimes very hot and when you change it, it takes quite a while for the new temperature to kick in." All instructors were satisfied with air quality (mean of M = 1.75, range 1-2). One of the instructors expressed extreme satisfaction with the air quality at L1050: "it is close to the outdoor access, so you do get some fresh air through the sliding doors, and having two doors (entrance & exit) allows for more air flow; some of the rooms get hot and stuffy but this room is fairly comfortable and not stuffy."

2. Room Configuration and Furniture

2.1 Layout and Furniture
Three instructors were dissatisfied with the room layout and configuration. Some faculty members liked the shallow room for less visual distraction, but they disliked the wide rows as it made it difficult for them to engage all the students. Further, moving around among students proved difficult as well. Instructors suggested having curved rows to facilitate student engagement. These faculty members complained about the workstation being on the right side of the room; they suggested a centred podium to facilitate student engagement from the entire width of the classroom. While many faculty members appeared comfortable with moveable desks, others suggested that fixed desks would make it easier to maintain the room in a useable shape and save time on room re-configuration upon beginning the class period. However, most of the instructors have initiated group work without reconfiguring the room into pods. While some faculty members suggested changing the rows into pods, others were comfortable with rows. Some faculty recommended using the breakout rooms, which worked well for them; they stated: "breakout rooms are fantastic for this class." Others commented that "breakout rooms wouldn't help, it's more like looking at questions, quickly discuss in 5 to 10 minutes, report to class, do what's next." When envisioning their ideal classroom, instructors suggested many changes, including enhancing the room layout and investing the wasted space by re-configuring the current desks, and by taking out extra tables and seats.

2.2 Sightlines and Colour
Three instructors rated wall colour as satisfactory, but one faculty member was dissatisfied without giving further insights. For their ideal classroom, instructors suggested making the

projected images more visible to the class by replacing the current projecting screen with larger one and moving the projector back to make the images larger.

3. Technology
Technology tools were easily controllable for most users. However, for some instructors, the workstation and the projector were controllable with some difficulties; one instructor complained: "the workstation is old, big, clunky, off to the side, and out-dated. I don't use it."