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Seeing Through the Eyes of Students: Participant Observation in an Academic Library

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Abstract

Participant observation of study spaces in the Killam Memorial Library at Dalhousie University revealed significant insight into the study behaviors of individual students and groups, the impact of building design on these behaviors, and the research methodology itself. The effect of unintentional panoptical design (on adherence to quiet study rules) and ambient noise (on productivity and popularity of spaces) were both observed, as were the blending of social and academic activities and the choices of students to work individually and collaboratively within a community environment rather than in solitude.

As an ethnographic methodology, participant observation is rarely conducted in library spaces. This study proves the value of this methodology when students observe fellow students. Their complete membership in the culture under observation permits unobtrusive access and a richness of collected data that is enhanced by observer insight into student life.

Keywords

ethnography; observation; student study; user-behaviour; library space; anthropology; study-behavior

Introduction

This student study was one of three conducted at Dalhousie University's Killam Memorial Library with the help of a fourth-year seminar class of Sociology and Social Anthropology (SOSA) majors. In the fall of 2010, a partnership was formed between a librarian and the SOSA majors' seminar class to conduct three socio-ethnographic studies of students who use the Killam Library in order to provide data to inform future improvements to the library's services, space, and online presence. These studies

provided for-credit, experiential learning opportunities for the SOSA majors and were to be conducted within the requirements of their seminar course. The purpose of this particular study was to take advantage of an opportunity to explore, via participant observation, how students use space in their academic library. (The results of the remaining studies – an interview survey pertaining to student uptake of library resources and instruction, and focus groups to identify students' use of the library website – were recorded in internal reports.)

The SOSA majors brought a significant understanding of ethnographic research to the project, and following consultation with the librarian, they recommended that the first approach consist of a participant observation study of the library. Participant observation is an ethnographic research method whereby the observer participates in daily activities in the natural environment of the people under study. The SOSA majors were perfect candidates for the observer role as they would be studying their own culture – university students, in their own environment: the university library – thereby further defining this method of study as opportunistic participant observation. The purpose of this article is to share the findings of this study, to provide insight into students' learning and working behaviors within library spaces, and to demonstrate the value of student-led participant observation in academic libraries.

University and Library Description

Founded in 1818, Dalhousie University is a mid-sized, PhD-granting, research university in Halifax, Nova Scotia, Canada. It offers 180 degree programs in Arts and Social Sciences, Science, Management, Computer Science, Law, Medicine, Dentistry, Health Professions, Engineering, Architecture and Planning. It is a 79-acre urban campus located in the heart of the city. Enrolment at the time of this study was just below 17,000; 44% of our students come from other Canadian provinces and 11% are international students. Sixteen percent of undergraduate students live in residence accommodations on campus.

The Killam Memorial Library, the main branch of Dalhousie University Libraries, primarily serves students and teaching staff in the faculties of Arts and Social Sciences, Sciences, Management, and Computer Science; this amounts to slightly more than half of the university's total student enrolment. The five-floor library building opened in 1971 with 230,000 square feet of space (21,368 square meters). No major reconstruction has been performed on the building aside from the addition in 1996 of a glass roof over the central courtyard, or atrium. The library houses over one million books and journals, three Learning Commons, Archives and Special Collections, various services and departments such as a Writing Centre, Technical Help, and Geographic Information Services, as well as a mix of quiet study and limited conversation areas. The building is open from 8 a.m. to midnight during the fall and winter semesters with extended hours (to 3 a.m.) during exam periods and shortened hours in the spring and summer months.

Literature Review

Ethnographic research attempts to fully understand a culture, including subcultures such as university students in the context of a library. A significant contribution to ethnographic student studies occurred in 2005 when the University of Rochester libraries hired an anthropologist and embarked on a two-year study of undergraduate students, employing such methods as interviews, mapping diaries, photo surveys, and design workshops for their website and physical spaces. Researchers noted that this project was a "wake up call" as it revealed that library staff and other decision-makers knew very little about how students conducted their academic lives and that past decisions regarding library services and space had been based merely on assumptions (Foster and Gibbons, Conclusion 82).

Inspired by this ground-breaking work at Rochester, five Illinois universities launched the two-year ERIAL Project (Ethnographic Research in Illinois Academic Libraries) in 2008. This project was supported by two anthropologists and also employed ethnographic methods. The aim of this project was to better understand how students conduct their research and to apply this newfound understanding to the design of library services and resources in order to better support student work behaviors. The ERIAL project primarily used the interview method but also employed photo journals, mapping diaries and web design workshops. Again, findings did not match library staff expectations and were a welcome addition toward future planning (Asher, Duke and Green n.p.).

While Rochester embarked on their undergraduate study, Yale University Librarian Emeritus, Scott Bennett, challenged higher education to ask certain questions when designing learning spaces and identified some common design pitfalls such as making assumptions and failing to study users (First Questions 14-26). His survey of library directors revealed that between 1992 and 2001 only 41% of internal library assessments conducted to inform library construction decisions involved studying student learning behaviors (Designing 169). He posited that librarians may have a misguided sense that they are so deeply involved with users' research and learning activities that they have "insider's knowledge" and therefore know what the users want from library spaces. Systematic user studies can help remove these "blinders" and better inform staff and decision makers of the particular learning behavior of their own users (First Questions 14-26).

In particular, the observational research method has been used in several recent studies of academic libraries, including a mixed methods study of student behavior at Sewanee, The University of the South (O'Connor), an observational study of library furniture use at Randolph-Macon College (Young), and a video study of the use of library spaces at the University of Dayton (Webb, Schaller and Hunley). These studies revealed various student study behaviors and preferences pertaining to the physical environment. Psychologist Robert Sommer conducted several studies of student behavior in libraries in the sixties, including observations of sociofugal (i.e., maintaining distance) and sociopetal (i.e., allowing closeness) seating choices of students. Cynthia

Gal, James Benedict and Deborah Supinski observed students' territorial behavior in their use of library study tables. Research pertaining to student seating patterns was also conducted by Michael W. Loder by observing how students reshaped their seating behavior when their small academic library relocated to a new building. Having identified these and other examples of observational studies in libraries, the current authors could find very few that used participant observation – the approach used in this study – as a research method. Participant observation is, by nature, a challenge for librarians to perform; however, Doug Suarez and Joanna Bryant managed to apply it during their student years or by returning to student life (Suarez n.p.; Bryant 7-18). Additionally, indexing of library literature has not fully accommodated observational methods, making examples of this type of research in libraries difficult to find (Baker 172).

As an ethnographic method, Margot Northey and Lorne Tepperman considered participant observation "particularly useful for the studying of small populations that exist outside the mainstream" (81), which is why the SOSA majors and the Killam Library deemed it a valuable tool for studying the inner library environment. Northey and Tepperman also supported the idea of students studying a culture, even their own, "since they claim a general interest without having to commit themselves to any particular belief or faction" (83). Virginia Young, in her article about a library observation study, posited that students may be the better observers in that their presence would less likely impact the behaviors of the students observed (8). The value of having students conduct such observational studies will be further discussed later in this article.

Methodology

Using a grounded theory approach, fourteen SOSA majors were required to spend a minimum of two, one-hour increments collecting data in the library – observing their surroundings, monitoring general characteristics of students and student groups: their activities and behaviors, duration of use, interaction patterns, and traffic flows across various days and times. The minimum of two hours of observation was negotiated with the course instructor as a requirement for course completion. This process took place over four weeks and resulted in eighty hours of observation and thirty-two pages of field notes. Many students observed beyond the two hours required, some putting in up to seven hours in one hour increments. Students observed and recorded data alone. In order to ensure that observations took place in all areas of the library, students and the lead librarian met once per week to determine what library spaces required observation.

The librarian who initiated the project became the librarian lead, and one of the SOSA majors volunteered as the student lead. Ethics approval for the project was granted by the Sociology and Social Anthropology Department. Library staff were notified of the study in meetings and via our internal online social network. Bulletins were posted on the library's website and within the library building to inform users that unobtrusive observations would be taking place.

The focus of this study was purely qualitative in nature – to observe and record

behaviors and activities but not to count numbers of occurrences or students engaged in these behaviors and activities. A quantitative approach may be taken in the future to observe specific behaviors and activities revealed in this initial study.

The SOSA majors manually wrote out their individual observations, including detailed observations of student behaviors and activities and the environment (e.g., time of day, lighting, heat, noise level, etc.). Some notes were theoretical in nature as the SOSA majors attempted to interpret the meaning behind what they observed, often based on their own experiences. None of the notes were recorded either by audio or video.

The thirty-two pages of written observations were very rich and dense in information, making the identification of themes and patterns very challenging. In order to accomplish this task the SOSA majors met every Friday morning with their professor and the lead librarian to openly discuss their notes and findings within the group. During these sessions, the lead librarian posed questions aimed at clarifying her understanding (as a member of a different university subculture) of the SOSA majors' recorded observations and eliciting discussions about the students' own experiences as members of the culture under study using the same spaces in which to conduct their own academic work. The SOSA student lead recorded additional notes during these meetings and combined these with the other SOSA majors' field notes. The SOSA majors then collaboratively identified codes for the qualitative data, which the SOSA major lead then applied. The SOSA majors next plotted patterns of use onto visual floor plans of the Killam library. (Examples are given in Figures 1 and 2.) The findings from this process identified a number of trends of use and behaviors that will be explained in the Results section.

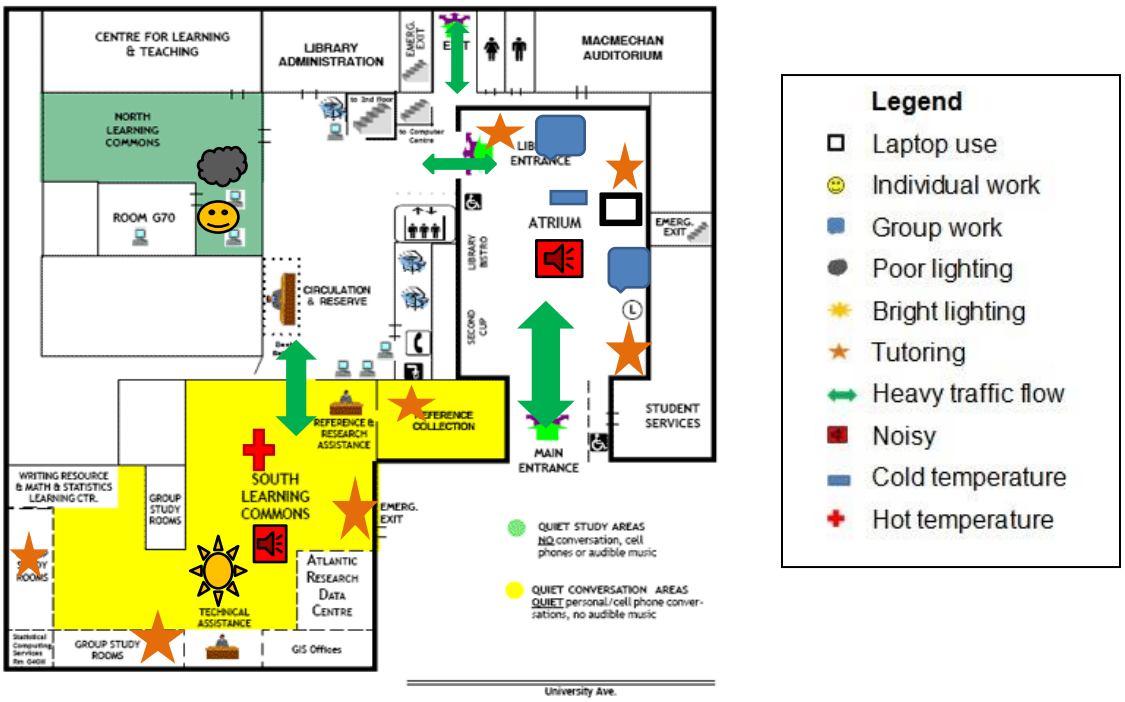

Figure 1: Dalhousie Killam Library First-floor Floor Plan with Observation Icons

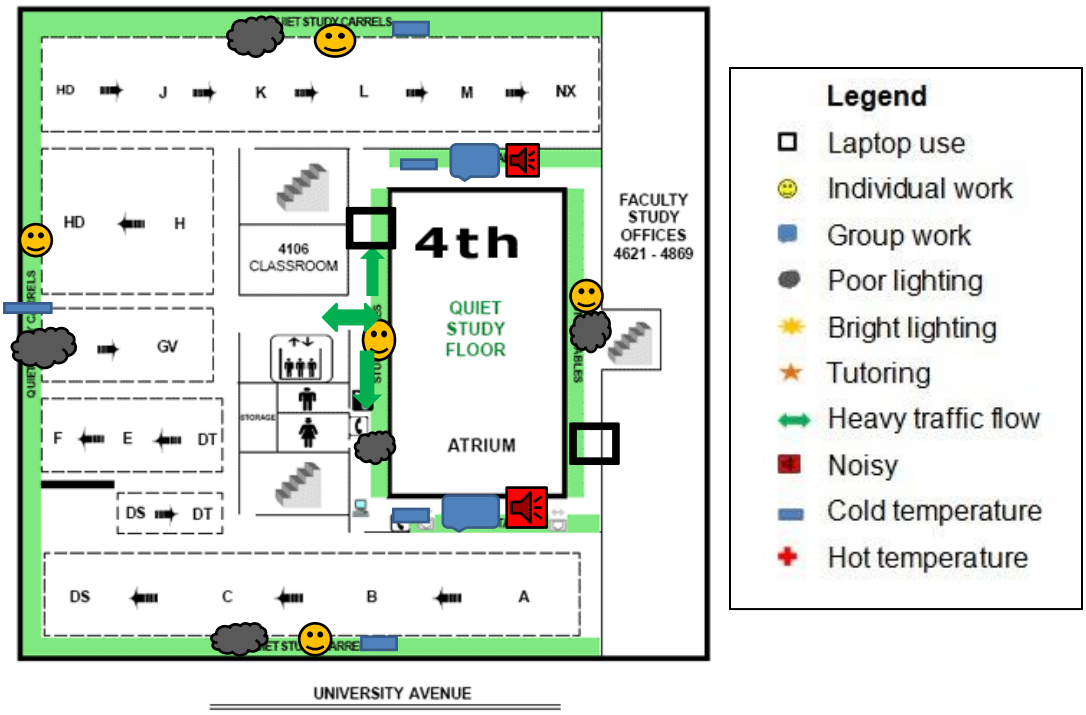

Figure 2: Dalhousie Killam Library Fourth-floor Floor Plan with Observation Icons

Because the SOSA majors were members of the student body and used the library consistently prior to research, their observational role would fall under Patricia A. and Peter Adler's definition of 'complete membership' (67). More specifically, the type of complete membership of the SOSA majors is termed 'opportunistic', meaning that they were members of the group under observation before they decided to study them. Thus the SOSA majors were very much insiders of the culture under observation. Adler and Adler argue that the richness that can be drawn from this depth of research significantly outweighs any lack of scientific detachment, which critics have presented as a risk of this type of participant observation (81, 84). The sheer number of individual observers and the hours spent observing assured that multiple perspectives over a significant time period were recorded. Going further, the class discussions that identified major themes also minimized individual biases that may have influenced the recording process.

It should be noted that these observations took place during the final month of the fall semester – a busy time for academic libraries and for students. This project was opportunistic in nature in that it relied on the availability of the SOSA majors to conduct the observations. The final month of the fall semester presented itself as a time when the SOSA majors were available within the course schedule to conduct the work.

Results

As stated in the methodology section, fourteen SOSA majors participated in the observation process, resulting in eighty hours of observation and thirty-two pages of

field notes. In this section these recorded observations are generalized under three themes identified via the grounded theory approach. These themes are: human traffic flows, physical design effects, and study/work behaviors.

Human Traffic Flows

The major finding regarding human traffic flows was that some of the heaviest foot traffic occurred in areas designated as quiet study spaces. These include the atrium hallways of the 4th and 5th floors. (See Figure 2 for an atrium hallway layout, and Figure 3 for a photograph of an atrium hallway.)

Figure 3: Individual Study Tables in Atrium Hallway, Dalhousie Killam Library

While much of the foot traffic in the building remained on the first floor (where most library services and the North and South Learning Commons are located), many students proceeded up to the other floors to study or to access print collections and other library services. The SOSA majors noted that the natural path to these destinations took users through the atrium hallways. Once in these areas, they would walk to bathrooms, water fountains, stairs and elevators, or walk back and forth looking for available seating. This resulted in the “quiet study” atrium hallways being major thoroughfares of traffic. The constant shuffling of people through these hallways caused noise as travellers also chatted with friends or on their cell phones as they walked by. This constant flow of voices and movement disrupted the library-designated intended purpose of these areas. Quiet study areas outside of the flows of traffic were not immune from interruption. Separated from lobbies and elevators by doors regularly opened by users, these quiet study areas were frequently exposed to cell phone chatter and to students who socialized in these locations. Despite the disruptions, these quiet study spaces were heavily used by students, perhaps because these were the only quiet study spaces in the library building with an adequate wireless signal.

Physical Design Effects

Lighting appeared to have an effect on chatter and productivity in different parts of the library building. Inadequate or low levels of lighting were recorded in some of the cubicle areas in the building and, most notably, in the east and west atrium hallways where individual study tables are located. Natural light fills the atrium hallways in the daytime; however, once darkness falls these areas become underlit as well. The SOSA majors experienced difficulty concentrating in these low-lit areas and observed more subdued student behavior and individuals sleeping. This was contrasted with areas with abundant lighting such as the north and south atrium hallways where students at group tables were lively and often too loud. The SOSA majors reported that there didn't appear to be a happy medium – low light caused lack of concentration and sleepiness and yet bright light inspired chatter – and suggested that individual desk lamps could be a solution.

It was observed that the most successful areas in terms of adherence to food and quiet policies were those that reflected a 'panopticon' design (i.e., a design in which authority figures are in a position that affords complete surveillance of the study area). The panopticon effect was observed in two locations in the library – the large South Learning Commons and the small North Learning Commons. The South Learning Commons, although large and shaped like a horseshoe (see Figure 1), had a desk at the head (or curve) of the horseshoe where the Learning Commons technical support staff worked. From this position, the staff members at the desk were visible to the entire room, and according to the SOSA majors' theory, this position and this presence had a positive effect on student behavior. They reported that the South Learning Commons, unlike other study areas in the building, was a place where conversations stayed muted and users could depend on being able to work productively with few interruptions or distractions. It was felt that the quiet policy was adhered to in this area not merely because there was a staff presence but because students perceived that they were being monitored. Unfortunately, the South Learning Commons underwent some renovations towards the end of this observation period that resulted in the technical support desk being moved to a newly created room on one side of the horseshoe. The panopticon effect was lost, and library staff members subsequently received a growing number of complaints about noisy individuals.

In the North Learning Commons, the panopticon effect is more subtle. There is a staff presence in this area for only two and half hours, late on weekday afternoons (for microform assistance); however, the Circulation Desk is just outside the door, and the university's Centre for Learning and Teaching (CLT) is in an adjacent room (see Figure 1). Staff working in the CLT must walk through the North Learning Commons to access their offices. Circulation staff just outside the door and CLT staff to the right, in an adjoining room, together create a panopticon effect or at least the perception that the room is casually policed. The SOSA majors all agreed that this room, which is also considerably smaller than the South Learning Commons and therefore more easily self-policed, is the quietest workspace in the library building, and this they attribute to the panopticon design.

Another design element that had a significant effect on user behavior was ambient noise. This element was observed in two areas: the atrium and the South Learning Commons. In spite of the constant noise, these two locations appeared to be very popular spaces for study as well as tutoring. The two- and four-seater tables in the atrium were almost always filled with people at work, despite the fact that traffic flows were heavy. This activity is attributable to the presence of a lunch bar and a café and the fact that the atrium is an entrance point to the rest of the library. Furthermore, the atrium contained water features that emitted the sound of running water. The South Learning Commons was also a heavily used area, where foot traffic is high, muted conversations are permitted, and up to 120 computer keyboards are in use at any given time.

One would suspect that noisy areas with high traffic flow would deter studiers, especially those doing individual work; however, the opposite was observed. Perhaps the amalgamation of different noises and sounds combined to create a larger 'white noise' effect, which can be conducive to concentration (Söderlund 56). On the other hand, it may be that students felt that working in more public and highly used areas gave them the freedom to be loud themselves, as well as eat, and indulge in activities such as cell phone use and social conversations, thereby easily blending the social and working/learning activities. This phenomenon will be discussed further in the Discussion section.

Finally, wireless access in the library, the availability of power outlets, and the inability to print from personal laptops were three factors that appeared to influence laptop and computer workstation use. Wireless internet reception was deficient in some areas of the library, including the stacks. Students preferred to cluster around areas where there existed a strong internet connection, but unfortunately these areas lacked a sufficient number of power outlets. Students were observed cooperating by sharing outlets with their peers. Conversely, there were plenty of outlets in under-used carrels where there was no wireless reception.

It was repeatedly observed that the library computer workstations were consistently in demand, and there were often students waiting for computers to become available. During the time of this study, students were not able to print from their personal laptops in the library, meaning that even those who brought their laptops would need to locate a library computer in order to print their work. This high demand for workstations resulted in students 'holding' them for hours at a time. This was observed occurring in two ways: students would either stay at the computers doing non-academic work on study breaks, or they would organize 'shifts' with friends and take turns using the same workstation throughout the day.

Study/Work Behaviors

Students appeared to prefer public spaces in which to study. The SOSA majors observed heavy use of individual work tables that face the atrium glass walls (see Figure 3) and away from passers-by, and posited that this choice may be made to limit

one's socializing and other activities such as playing video games, Facebooking, or watching videos on laptops. By being in such a public space with their laptop screens facing the public, are students forcing themselves to concentrate better on their academic work? The SOSA majors indicated that this is often their own personal choice when they are studying or writing papers.

We fully expected to receive many reports of students disobeying quiet study rules, but we did not expect to discover a nearly equal number of violators of the no-food policy. Interestingly, the SOSA majors reported that staff reproved students who were eating but not those who were talking. A possible explanation could be that one cannot deny the food in one's hands or the crumbs on one's desk, but one could easily cease talking when staff arrived on the scene.

Finally, in terms of individual work behaviors, it was observed that individual workers didn't necessarily choose individual tables to work at. Several observations were made of individuals selecting a group study table (a large table) to work at, spreading out books, papers, laptops and supplies. Friends or strangers could join them at these tables at a later point, thus group study tables were popular not only for group work but for individual work within groups.

Observations of space use and interactions revealed a contrast between group and individual work, and what happens when the two meet. The high demand of group study space coupled with the co-location of quiet study spaces and high traffic areas led to the observance of both aggressive and cooperative behaviors.

On one hand students displayed cooperative behavior when establishing groups and creating study spaces. Large tables intended for group work would fill up quickly, so students would work together at repurposing quiet study spaces by pushing together individual study tables to create larger spaces for group work. Groups would also cluster around library workstations in order to do online quizzes. As mentioned previously, students would also cooperate by sharing electrical outlets where wireless internet was available and would take shifts at library computer workstations throughout the day.

Contrasting with these cooperative behaviors, aggressive behavior usually occurred when group study and individual study coincided. Some group study tables and study rooms are located within or near individual quiet study spaces. The SOSA majors felt that study rooms on the first floor gave students within them the illusion that they were contained in a space where they could conduct louder work without disrupting their peers outside; however, the rooms did not contain enough of the noise. The repurposing of the individual tables by groups brought group study even closer to individual study. Aggressive behavior between groups and individuals came from the pressure of self-policing in these areas in order to enforce the quiet study rules.

The SOSA majors felt that some of this aggression was the result of the ineffective monitoring by library staff. They identified monitors as individuals they recognized from the reference desk and observed that some monitors did not enforce the noise policies

and others would give warnings that went unheeded. The SOSA majors agreed that while monitoring by library staff was ineffectual, the effort was appreciated by those bothered by the noise. They recommended that the library consider designing quiet spaces to encourage adherence to policies rather than relying on ineffectual reminders from library staff. Panopticon designs help, as do smaller areas which are more easily self-policed, tucked away from foot traffic and other high-use amenities (elevators, washrooms, water fountains, etc.). Study spaces should be better defined as either small, more intimate, quiet study spaces, or large group study areas – but not the two combined in one space. This would relieve the pressure felt by individuals to self-police when group work becomes too noisy or distracting.

Discussion

This student-led, participant observation study shone light on the effects of library building design, the behaviors of students working within this design, and on the research method of study itself.

Building Design

Ambient noise and panopticon effects provided distinct benefits in terms of student productivity. Both effects were achieved somewhat accidentally as the atrium area with its water fixture and food services was intended more for socializing than for study or work activity, and the panopticon effect was only realized in the South Learning Commons after it was lost due to the relocation of the technical help desk.

Based on observations and on the SOSA majors' reports of their own experience, ambient noise appears to have a powerful effect on a student's ability to concentrate and stay focused. Students appear to recognize this benefit and seek out this type of study space, not just at our library but at others as well. In a multiple methods study conducted at Sewanee, The University of the South, Richard A. O'Connor discovered that students there wish for quiet but not to the point that they feel they are in a "sensory deprivation tank" (63). Students indicated to the University of Dayton researchers that group spaces should have "background noise" (Webb, Schaller and Hunley 420). Observations at Loughborough University in the United Kingdom also revealed heavy use of a particular busy, noisy area for study purposes (Bryant 11). If ambient noise creates spaces conducive to concentrated study, it could redefine the meaning of 'quiet' study spaces. Thanks to this participant observation study, library staff are now more cognizant of the benefits of panopticon design and ambient noise and are incorporating this understanding into discussions of other potential layout changes.

Student Behaviors

One might assume that students who are doing individual work would seek isolated, silent spaces. However, this did not prove to be the case in this study. We saw over and over that individual studiers sought out quietness, not silence (as discussed in the context of ambient noise) and community, not isolation. Many individual studiers were

observed choosing spaces where other students were present, and appropriating group study tables for individual work by spreading their material out to create a personal space for themselves. This student desire for plentiful individual workspaces that may be shared with others was also reported by the University of Rochester when they conducted design workshops for furniture layout (Gibbons and Foster, *Library Design* 28). Robert Sommer also observed similar behavior in his research on library users (*Ecology of Privacy* 239), as did Cynthia Gal, James Benedict and Deborah Supinski who studied territoriality of undergraduates (572). The act of claiming a large table and marking of one's territory with books, backpacks and laptops is respected by other students who usually claim a diagonal seat or one at the other end of the table.

Loder suggests that the modern student uses a multiplicity of materials, and is therefore attracted to larger study tables over individual carrels that are also perceived as too enclosing (92). It is interesting to note that a student survey conducted by Sommer in 1966 indicated that nearly half of students preferred to study in public areas over individual carrels, citing a need to be around other people rather than in a quiet, enclosed space. Sommer wasn't sure if this had anything to do with introversion or extroversion (*Ecology of Privacy* 239-40). Our observation shows that individual workers appreciate a sense of community while studying. In his research on the ecology of study areas, Sommer argued that there are "students for whom the sight of others studying exerts a facilitative effect on their own motivation", described by social psychologists as the "social increment" (*Ecology of Study Areas* 275, *Ecology of Privacy* 240). Overall, Sommer's studies revealed that social factors, rather than physical features, were more important to students in determining the best study space (*Ecology of Privacy* 241). This would explain why some Killam Library students were observed studying in areas that were intended for socializing, such as the atrium.

At a recent library conference, one of the authors discussed preliminary findings of this study (Bedwell). A discussion ensued whereby audience members (predominantly librarians) indicated their own preference for study space – solitary and quiet versus communal and active with some noise. A casual poll was then taken with more than 80% of attendees reporting a preference for solitary and quiet. According to our observation of students and various similar studies, this preference doesn't seem to be shared by the general student body. Is it possible, then, that in the case of library buildings and the design of study spaces, introverts are designing for extroverts?

When quiet study areas were designated throughout the library building, wireless access was not available or of concern. Students did not necessarily require/expect internet access and had plenty of quiet locations throughout the building in which to study, most notably the study carrels in the stacks. When the wireless network was installed in the building, users realized that this signal did not reach the carrels and so moved to the combined individual and group quiet study areas in the atrium hallways. Library staff did not realize that these quiet areas were also natural flows of noisy foot traffic – this was only recently revealed by this study. Since this study was conducted, the library underwent wireless and lighting upgrades, and we will soon ascertain if these improvements have resulted in students once again populating these underused

carrels, thereby lessening the demand on individual quiet study space in the atrium hallways. Based on the findings of the above mentioned studies, we wonder if students will, instead, be reluctant to leave these public, active spaces.

The fact that so much eating was observed in areas where it was prohibited, and despite the ease of discovery, hints that this activity may be much more closely linked to actual work behaviors than our library and staff are prepared to acknowledge or allow. Currently, food is only allowed in specific sections of the library. The effect of the act of eating on learning and/or productivity deserves more study. A pilot area could be designated to measure the real impact or damage of allowing food. Some newly designed libraries are taking the plunge and allowing food and drink throughout the entire library building. Barbara Clubb, Chief Executive Officer of the Ottawa Public Library has stated “We haven't lost a computer to a coffee cup yet” (Grant). The University of Dayton study shows significant support for allowing food in library study areas (Webb, Schaller and Hunley, 420).

Findings of an internal survey of library workstation users (conducted at the same time as this study) support the SOSA majors’ belief that many students, with or without laptops, prefer working in public spaces to help with their focus. Within their comments, many survey respondents indicated that they purposely choose the public spaces of the library and the computer workstations to force themselves to focus on their work and limit leisurely distractions, specifically the distractions on their personal laptops (Bedwell and Comeau 9). The survey also revealed that laptop owners had to rely regularly on the computer workstations for printing purposes, confirming the SOSA majors’ observations of laptop users leaving their laptop to quickly use a desktop computer. Since both the participant observation study and the workstation survey, the library's information technology services department has improved wireless printing capabilities. Further study will reveal the effects of this enhanced service on laptop and workstation use.

Figure 4: LINC Classroom/Study Space, Dalhousie Killam Library

Other improvements that have been made following this study include a lighting project throughout the building to replace fluorescent bulbs with brighter, more energy efficient alternatives, and a new classroom/study space called the Learning Incubator and Networking Centre (LINC, see Figure 4). This room was constructed in an area once occupied by shelving. It is an innovative, technology-driven teaching space that is open to group and individual users

when not booked for classes. Various styles of seats and tables are arranged in pods with wall-mounted display screens and whiteboards. Further study should reveal if this newly designed space is helping to accommodate the observed demand for additional group work spaces.

Research Method

In the execution of ethnographic research the question of how to gain access to the group being studied is always an issue. It would have been very difficult for university faculty or contracted cultural anthropologists to observe and gather data that is both in-depth and a product of the natural behaviors of library users. Had a member of the library or university staff conducted this research, the observations would likely have been flawed due to the very panopticon effect that was discussed earlier in this article. Students would have been less likely to act naturally or re-appropriate the structure and rules of the library if they felt that an authority figure was observing them. Having university students perform complete membership participant observation eliminated the problem of access. As members of the culture under study who use the same spaces for their own academic work, they were also more sensitive to their surroundings, knew what to observe and record, and had their own experiences/insight with which to explain observed behaviors. Furthermore, as mentioned in the literature review, as opportunistic participant observers with complete membership, the SOSA majors are considered to be in the best position to study this group. Observer bias is a concern within this method of study, but we feel this was ameliorated through regular consultation with the librarian lead who, before the study was conducted, thoroughly discussed with the SOSA majors their own individual concerns and experiences with the library. We believe that the sheer number of observers and observations helped eliminate much of the natural observer bias that may occur in this type of study. It is clear that the study benefitted greatly by being conducted by opportunistic participant observers with complete membership.

Conclusions

When it comes to designing library space to meet student needs, studies such as this demonstrate that it is important to consider student study behaviors during the design process. Not only did this study identify simple changes to the library that could potentially optimize the use of fixed design and increase user satisfaction and space practicality, it also prevented potentially impractical decisions. The findings of this study echoed the experiences of the University of Rochester researchers who saw “over and over again how much [they] did not know about [their] students and their academic endeavours” (Gibbons and Foster “Conclusions” 82).

Those who have studied student behavior in libraries have recognized that group work involves the need for community but that individual workers are motivated by a community environment as well. Bennett argued the benefit of “shifting from an apparent competition between study and socializing to a regulation of behaviors that are inextricably both academic and social in nature” (First Questions for Designing Higher

Education Learning Spaces 17). As we saw in the Killam library, aggression between groups and individuals occurred when the two coincided with little regulation. The library needs to discover how to effectively do what Bennett urges: “accommodate both solitary and collaborative learning behaviors, understanding that both occur with approximately equal frequency” (18).

A library must provide a mix of spaces, as Sommer indicates: “it is a serious mistake to assume that all people have the same spatial needs” (“The Ecology of Privacy” 246). That leaves us with the question of how much of what type of spaces a library should provide. This question can be successfully answered by careful ethnographic study of students served by that library. With this in mind, and with findings from this study that have further intrigued us in hand, we hope to conduct another participant observation of the Killam Library utilizing the “library as a laboratory” (Webb, Schaller and Hunley 421) – by instituting some small changes to accommodate what we now know about students in our spaces and then observing again to learn more. A follow-up study will ideally involve participant observation over a longer period of time unconstrained by course requirements and schedules and will involve additional methods such as surveys, interviews, and focus groups to provide triangulation of findings.

This participant observation study was unique in that it consisted of a team-based approach – a librarian lead with insight into library operations and a class of social anthropologists with ethnographic research skills and an understanding of what it is like to be a contemporary university student. In 1970, Sommer stated

> I am not a designer and I do not pretend to be one. ... I think it is desirable for architects to learn something about social science methods without necessarily becoming social scientists themselves ... The solution to this seeming impasse is for designers and social scientists to work in teams with each member contributing his special insights and skills (“The Ecology of Study Areas” 279).

The authors believe this was achieved in this particular study through co-operation and knowledge-sharing between social science students, their professor, and a librarian. We hope this study encourages future collaborations at other academic libraries that also have access to a talented group of Sociology and Social Anthropology students. It would be very interesting to see where this cooperative approach takes the library science field.

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Works Cited

Adler, Patricia A. and Peter Adler. *Membership Roles in Field Research*. Vol. 6. California: Sage Publications, 1987. Print.

Asher, Andrew, Lynda Duke, and David Green. “The ERIAL Project: Ethnographic Research in Illinois Academic Libraries.” *Academic Commons,* n.d.: n. pag. Web. 2 May 2011. <http://www.academiccommons.org/commons/essay/erial-project>.

Baker, Lynda M. "Observation: A Complex Research Method." *Library Trends* 55.1 (2006): 171-189. *Academic Search Premier*. Web. 28 Feb. 2013.

Bedwell, Linda. “Students in the Mist: Findings of an Academic Library Student Study.” *Atlantic Provinces Library Association Conference. Sheraton Hotel Newfoundland.* St. John’s, NL, 18 May 2011.

Bedwell, Linda and Marc Comeau. “Killam Learning Commons Workstation Survey (December 2009): Summary Report.” Dalhousie University, Halifax NS: 2009. Print.

Bennett, Scott. "Designing for Uncertainty: Three Approaches." *Journal of Academic Librarianship* 33.2 (2007): 165-79. *ERIC.* Web. 28 Feb. 2013.

Bennett, Scott. "First Questions for Designing Higher Education Learning Spaces." *Journal of Academic Librarianship* 33.1 (2007): 14-26. *ProQuest Research Library.* Web. 28 Feb. 2013.

Bryant, Joanna, Graham Matthews, and Graham Walton. "Academic Libraries and Social and Learning Space: A Case Study of Loughborough University Library, UK." *Journal of Librarianship and Information Science* 41.1 (2009): 7-18. *ERIC.* Web. 28 Feb. 2013.

Foster, Nancy Fried and Susan Gibbons, eds. *Studying Students: The Undergraduate Research Project at the University of Rochester*. Chicago: Association of College and Research Libraries, 2007. Print.

Gal, Cynthia A., James O. Benedict, and Deborah M. Supinski. "Territoriality and the Use of Library Study Tables." *Perceptual and Motor Skills* 63.2 (1986): 567-574. *PsycINFO*. Web. 28 Feb. 2013.

Gibbons, Susan and Nancy Fried Foster. “Conclusion: Creating Student-Centered Academic Libraries.” *Studying Students: The Undergraduate Research Project at the University of Rochester*. Eds. Nancy Fried Foster and Susan Gibbons. Chicago: Association of College and Research Libraries, 2007. Print.

Gibbons, Susan and Nancy Fried Foster. “Library Design and Ethnography.” *Studying Students: The Undergraduate Research Project at the University of Rochester*. Eds. Nancy Fried Foster and Susan Gibbons. Chicago: Association of College and Research Libraries, 2007. Print.

Grant, Kelly. “The New Library: ‘Not Just About Books Anymore’.” *The Globe and Mail* 19 Jan. 2010: n. pag. Web. 14 June 2011. <http://www.theglobeandmail.com/news/national/toronto/the-new-library-not-just-about-books-anymore/article1436999/>.

Loder, Michael W. "Seating Patterns and Improvements in a Small College Library: A Case Study." *College & Undergraduate Libraries* 7.2 (2000): 83-95. Web. 28 Feb. 2013.

Northey, Margot, and Lorne Tepperman. *Making Sense: A Student's Guide to Research and Writing*. Don Mills, Ontario: Oxford University Press, 2007. Print.

O’Connor, Richard A. “Seeing duPont Within Sewanee and Student Life.” *Task Force Final Report for the Jessee Ball duPont Library*. Sewanee University, 2005. Web. 27 April 2012.

Söderlund, G B W., et al. "The Effects of Background White Noise on Memory Performance in Inattentive School Children." *Behavioral and Brain Functions* 6.1 (2010): 55-64. Web. 29 May 2013.

Sommer, Robert. "The Ecology of Privacy." *Library Quarterly* 36 (1966): 234-248. Web. 28 Feb. 2013.

Sommer, Robert. "The Ecology of Study Areas." *Environment and Behavior* 2.3 (1970): 271-280. Web. 28 Feb. 2013.

Suarez, Doug. "What Students Do When They Study in the Library: Using Ethnographic Methods to Observe Student Behavior." *Electronic Journal of Academic & Special Librarianship* 8.3 (2007): n. pag. Web. 28 Feb. 2013.

Webb, Kathleen M., Molly A. Schaller, and Sawyer A. Hunley. "Measuring Library Space Use and Preferences: Charting a Path Toward Increased Engagement." *portal: Libraries and the Academy* 8.4 (2008): 407-22. Web. 28 Feb. 2013.

Young, Virginia E. "Can We Encourage Learning by Shaping Environment? Patterns of Seating Behavior in Undergraduates." *Learning to Make a Difference: Proceedings of the Eleventh National Conference of the Association of College & Research Libraries, April 10–13, 2003, Charlotte, NC*. Web. 28 Feb. 2013. <http://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/pdf/young.PDF>.